Department of Transportation

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT – CONTRACT 3

DESIGN-BUILD PROJECT

PIN X731.65, Contract D900055

Request for Proposals

Addendum #6

July 1, 2022

Modification to the Request for Proposals

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT – CONTRACT 3

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Note to Proposers

Differences between the deleted pages and the revised pages have been identified as follows:

- Brackets have been inserted on the left-hand margin of the pages to indicate where changes have been made to the documents; and
- Text additions have been shown in underlined red font and text deletions have been shown in crossed out red font.

General Instructions

Delete pages A-3, A-4 and A-6 of the Instructions to Proposers, Appendix A, and substitute the attached revised pages A-3, A-4 and A-6.

Delete page C-7 of the Instructions to Proposers, Appendix C, and substitute the attached revised page C-7.

Delete Form SCD of the Instructions to Proposers, Appendix E, Forms, and substitute the attached revised Form SCD.

Delete Form SP of the Instructions to Proposers, Appendix E, Forms, and substitute the attached revised Form SP.

Delete Form WPS of the Instructions to Proposers, Appendix E, Forms, and substitute the attached revised Form WPS.

Delete pages 2, 72, 75 and 76 of the DB Contract Documents, Part 2, DB Section 100, General Provisions and substitute the attached pages 2, 72, 75 and 76.

Delete pages 1, 7, 11, 12, 77, 80, 93, 103, 104, 113, 116, 133, 137, 139, 140, 145, 146, 150, 156, 160, 168, 178, 179, 189, 197 and 218A of the DB Contract Documents, Part 3, Project Requirements, and substitute the attached revised pages 1, 7, 11, 12, 77, 80, 93, 103, 104, 113, 116, 133, 137, 139, 140, 145, 146, 150, 156, 160, 168, 178, 179, 189, 197 and 218A.

Delete pages 55 and 56 of the DB Contract Documents, Part 5, Special Provisions, and substitute the attached revised pages 55 and 56.

Delete Directive Plans AL-04, MST-4 and LSL-01 of the DB Contract Documents, Part 6, RFP Plans, and substitute the attached revised Directive Plans AL-04, MST-4 and LSL-01.

Delete Indicative Plans TYP-06, TYP-07, EL-01, and FP-02 of the DB Contract Documents, Part 6, RFP Plans, and substitute the attached revised Indicative Plans TYP-06, TYP-07, EL-01, and FP-02.

Delete page i of the DB Contract Documents, Part 7, Engineering Data, and substitute the attached page i.

Delete Staging Area Plan STG-01 of the DB Contract Documents, Part 7, Engineering Data, Staging Area Plan, and substitute the attached revised Staging Area Plan STG-01.

Delete Draft OCMC Permit of the DB Contract Documents, Part 7, Engineering Data, and substitute the attached Draft OCMC Permit.

Add the attached page xv to the DB Contract Documents, Part 7, Engineering Data.

Add Ameristar Impasse II - High Security Steel Fence System – Ornamental Pale Construction Specification to the DB Contract Documents, Part 7, Engineering Data.

Delete pages ii and iii of the DB Contract Documents, Part 8, Special Specifications and substitute the attached pages ii and iii.

Add Specification Item 582.99000016 – Embedment of Galvanic Anodes in Concrete to the DB Contract Documents, Part 8, Special Specifications.

Add Specification Item 601.04020011 – Methyl Methacrylate Color Surface Treatment for Pavements (MMA-CST) to the DB Contract Documents, Part 8, Special Specifications.

Delete Specification Item 613.70XX0011 – Bird Repellant System (July 2013) of the DB Contract Documents, Part 8, Special Specifications and substitute the attached Specification Item 613.70XX0011 – Bird Repellant System (Rev. October 2019).

Add Specification Item 635.01030011 – Cleaning and Preparation of Pavement for Pavement Marking – Stripes to the DB Contract Documents, Part 8, Special Specifications.

Add Specification Item 680.96026011 – Fiber Optic Cable and Single Mode – 60 Fibers to the DB Contract Documents, Part 8, Special Specifications.

Add Specification Item 683.92211208 – Fiber Optic Cable – 12 Fibers to the DB Contract Documents, Part 8, Special Specifications.

No other provision of the solicitation is otherwise changed or modified.

A3.0 PROJECT LABOR AGREEMENT

The Department has undertaken a due diligence study to determine whether there will be a public benefit to implementation of a Project Labor Agreement (PLA) for the Project and has concluded that a PLA is warranted. The agreement to be entered into between the Design-Builder and appropriate trade unions will be prepared and provided to the Proposers in the Final RFP or by Addendum. Any provision in the RFP inconsistent with the provisions of an approved PLA shall be superseded by the PLA to the greatest extent permitted by federal or state law.

A4.0 REFERENCE DOCUMENTS

Reference Documents include but are not limited to the following Documents:

A) As-built or Record Plans;
B) Existing Utility Plans;
C) Bridge Inspection Reports;
D) Final Design Report/Final Environmental Impact Statement

Reference Documents are located at the following Web site address:

https://www.dot.ny.gov/main/business-center/designbuildproject55

A5.0 PROCUREMENT SCHEDULE

A5.1 ANTICIPATED PROCUREMENT SCHEDULE

The Department anticipates the following procurement schedule for the Contract:

Activity	Date
Draft RFP Informational Meeting	Week of March 21, 2022
Final RFP to Shortlisted Firms	April 14, 2022
Date Proposers may start submitting ATCs for review	April 18, 2022
Proposal period one-on-one meetings with all Proposers.	April 18 – July 15, 2022
Final date for Proposers to submit new ATC's for review	June 16, 2022
Final date for requests for changes to Proposer's organization and personnel	June 15, 2022
Final date for Proposers to submit revised ATCs for final review	June 30, 2022
Final date for Department's responses to new ATCs submitted for review	June 22, 2022
Final date for Department's responses to revised ATCs submitted for review	July 6, 2022
Final date for receipt of Proposer questions	July 28~~14~~, 2022
Final date for Proposers to respond to conditional approval of ATC's	July 15, 2022

Activity	Date
Issue Date for Final Addendum and/or answers to Proposer questions	~~July 22~~August 5, 2022
Proposal Due	August 26~~10~~, 2022
Post Proposal meetings	Week of ~~August 22~~ September 12, 2022
Selection of Best Value	September 30~~16~~, 2022
Limited Negotiations (if required)	TBD
Contract Award	December 1, 2022
Notice to Proceed	December 1, 2022

This is a tentative schedule. All dates set forth in the preceding table and in this RFP are subject to change, in the Department's' sole discretion. To the extent that dates are changed, the Department shall notify the Proposers by Addendum.

A5.2 PROPOSAL DUE DATE

The completed Proposal shall be delivered to the Department's Designated Representative at the address specified in Section A8.0, no later than 12:00 P.M. (midday) (Eastern Time), on the date specified in Section A5.1 (the "Proposal Due Date").

A6.0 CONFLICT OF INTEREST

Federal regulations prohibit the hiring of any person or organization that has a "conflict of interest". Because of their prior work, the following firms have been identified as having conflicts of interest that prevent their consideration for the pending Project. Due to a conflict of interest based on services currently being provided that are related to this Project, Proposers may not include the services of the following firm(s):

- URS Corporation – New York
- AECOM
- Dewberry Engineers, Inc
- MJ Engineering and Land Surveying, P.C.
- SI Engineering, P.C.
- Zetlin Strategic Communications, Inc.
- Mathews Nielsen Landscape Architects, P.C.
- SIMCO Engineering, P.C.
- KLD Engineering, P.C.
- Environmental Planning & Management, Inc.
- Paul Carpenter Associates, Inc.

Proposers utilizing firm(s) identified above will be disqualified from participating in this Project.

A7.0 DBE PARTICIPATION GOAL

Refer to Part 1.

The Department may, in its sole discretion, issue one or more Addenda to address any issues raised in the One-on-One meetings.

A9.2 POST-PROPOSAL MEETINGS

Proposers shall not modify their Proposals or make additional commitments regarding Proposals at such meetings. The Department reserves the right to enter into discussions and request revised Proposals. The Department anticipates engaging in limited negotiations with the selected Proposer prior to Contract award regarding such matters as are deemed advisable for negotiations by the Department, as permitted by 23 CFR Section 636.513. The selected Proposer shall have no right to open negotiations on any matter that has not been raised by the Department. See ITP Section 5.3.

The Department has determined the need for post-Proposal presentations. Presentations should include concepts, content and detailed explanations from the written proposal for the categories below to demonstrate the plan for a successful project. Proposers shall limit attendance to ten (10) team members. Proposers may discuss the value of the ATCs approved. New content, not included within the written proposal submitted, will NOT be allowed. The presentation should focus entirely on the Quality Evaluation Factors only. Proposers shall not mention their Price Proposal during the presentations.

Proposers shall be limited to the use of a PowerPoint presentation (including 3D animation), which will become part of the procurement record. Proposers will be allowed one hour to present the concepts and content of their written proposals and will be required to respond to written Evaluator questions for a period of 30 minutes. The time allotted will not provide for a comprehensive report on each Proposal section. Each Proposer shall prioritize and develop a presentation to highlight those elements of their approach which offer particular value to the DOT. The presentation may include concepts, content and detailed explanations from your written proposal and shall conform to below:

Topics	Presenter
a. Proposal Overview	Project Manager
b. Project Understanding	Project or Design Manager
c. Design Solutions	Design Manager
d. Construction Approach / WZTC (Means and Methods)	Project Superintendent
e. Project Schedule	Project Manager
f. Rail Coordination	Rail Coordinator
g. Design Solutions	Lead Structural Engineer

No handouts or other material shall be allowed. The PowerPoint presentation shall be provided in advance for a conformance review by the Department, no later than 12:00 PM on ~~August 17~~ September 2, 2022, and will be loaded by DOT prior to your scheduled presentation time. The Proposer will be notified at least 24 hours prior to the scheduled time of presentation of any material removed from the power point by the Department, determined not to be in conformance with the Proposal.

A9.3 STATEMENTS AT MEETINGS

Nothing stated at any meeting will modify the ITP or any other part of the RFP unless it is incorporated in an Addendum issued pursuant to ITP Section 2.3.1 or, in the case of an ATC, approved in writing in accordance with ITP Section A11.1.

The successful Proposer will be required to develop and complete a project schedule using Primavera P6 Enterprise software in conformance with Part 2, DB §100 – General Provisions and Part 5, Special Provision SP-3 – Critical Path Method Schedule, after award of the contract. The successful Proposer will be required to maintain the dates, durations and other milestones shown on the Initial Baseline Schedule when preparing the Primavera P6 Enterprise based schedule. See Contract Document Part 2 - DB §108 and Special Provision SP-3.

The Initial Baseline Progress Schedule should include the following information, at a minimum for the overall project:

A) Notice to Proceed;

B) Design and design reviews;

C) Start of work at the project site;

D) Duration and dates of start and end for roadway closures, staging phases, and detours;

E) Dates for start and end of major design and construction activities;

F) Date that all traffic will be permanently transferred to the new and/or rehabilitated bridge structure(s) and/or roadway(s);

G) Substantial Completion date; and

H) Final Completion date.

With the Initial Baseline Progress Schedule, the Proposer should provide a narrative that lists and describes the assumptions and logic used in preparing the schedule, which should include the timing, duration and subject matter for the review and processing of all required submittals. The narrative should also include an explanation of the sequencing and phasing of construction activities and how the construction activities are planned to be performed based on different/multiple work shifts.

The Initial Baseline Progress Schedule should be provided in hard copy and electronically on thumbdrive. The schedule shall be presented in hard copy printed on 11” by 17” paper with a font size equivalent to a size 8 font. The electronic copy shall be in portable document format (pdf). The thumbdrive shall be labeled “Hunts Point Interstate Access Improvement Project – Contract 3, Project INITIAL BASELINE PROGRESS SCHEDULE and include the Proposer’s name. In addition, submit the electronic file in P6V15.1 XER format or newer.

C4.2 SCHEDULE OF CONTRACT DURATIONS

The Proposer shall submit Form SCD.

C5.0 3D ANIMATION

As part of their Technical Proposal, the Design-Builder shall submit a 3D animation in Windows Media Video (WMV) or MP4 format in accordance with Part 3, Section 25. The animation shall be submitted via USB flash drive no later than ~~July 29~~September 2, 2022.

FORM SCD

SCHEDULE OF CONTRACT DURATIONS

Table SCD - 1

OVERALL PROJECT COMPLETION (See Note 1 and 2)			
ACTIVITY	**DURATION (Calendar Days past NTP)**	**BID DATE (MM/DD/YYYY)**	**LIQUIDATED DAMAGES AMOUNT (PER DAY)** (See Note 3 and 4)
PROJECT SUBSTANTIAL COMPLETION (See Note 1 and 2)			**$25,000**
PROJECT COMPLETION (See Note 1 and 2)	------		**$10,000**

1. The Project Completion Date, to be included in the DB Agreement, Article 4.2, shall be defined by the number of calendar days past NTP as proposed by the successful Proposer and agreed to by the Department. Project Substantial Completion for the purposes of this Form SCD is defined as all construction activities completed, and no additional impacts to traffic, pedestrians, railroads, and subways. Remaining paperwork (i.e. As-Builts, close-out documentation, payments, and demobilization) may occur after the Project Substantial Completion date for the purposes of this Form SCD.

2. The Project Completion Date shall be computed by adding 90 calendar days to the Project Substantial Completion Date from Table SCD-1 and shall include complete demobilization from the work site(s).

   The Design Builder's attention is directed to the fact that in no event shall the Project Substantial Completion Date in Table SCD-1 exceed 9/5/2025. In the event the Project Substantial Completion Date exceeds 9/5/2025, it will result in the determination of non-responsiveness.

3. Liquidated Damages will be assessed, in the amount indicated in Table SCD-1, for failure to achieve Project Substantial Completion and Project Completion as required.

4. Multiple Liquidated Damages may be assessed concurrently for failure to complete the required project work in accordance with the Design-Builder's SCD provisions. In the event multiple liquidated damages are being assessed due to the Design-Builder's failure to perform, the sum-total of the liquidated damages shall be capped at two hundred thousand dollars ($200,000.00) per day.

Table SCD - 2a

INTERIM COMPLETION MILESTONES (See Note 5)				
PROJECT COMPONENT	**DURATION (Calendar Days past NTP)**	**MILESTONE COMPLETION DATE (MM/DD/YYYY)**	**MANDATORY COMPLETION DATE**	**LIQUIDATED DAMAGES AMOUNT (PER DAY)** (See Notes 4 & 6)
WORK WITHIN AND ADJACENT TO AMTRAK ROW (See Note 7)			September 1, 2024	$50,000
BRYANT AVE. PEDESTRIAN BRIDGE (See Note 8)			September 2, 2024	$25,000

5. The Interim Completion Milestone Dates, as submitted by the Proposer and indicated in Table 2a, shall be defined by the number of calendar days past NTP as proposed by the successful Proposer and agreed to by the Department. Where applicable, the Milestone Completion Dates listed in Table 2a shall not exceed the respective Mandatory Completion Dates.

6. Liquidated Damages will be assessed, in the amount indicated, for each calendar day or partial calendar day due to failure to achieve the Milestone Completion Date of the Project Component as submitted by the Proposer and indicated in Table SCD-2a.

7. Work Within and Adjacent To Amtrak ROW is defined as all work that is directly within and adjacent to the permanent easement of the Amtrak ROW, including work directly within the Amtrak ROW, retaining wall repairs, the reconstruction of EB Bruckner Boulevard, the installation of primary and secondary shielding for the Bruckner Expressway rehabilitation along the Amtrak ROW from approximate STA BE 95+45 to approximate STA BE 113+45, and the construction of Ramp SN. Counting of Days will continue until all work is completed and no further Amtrak coordination is required, all Ramp SN and EB Bruckner Boulevard lanes and shoulders are fully open to traffic ~~in their final project configuration~~ with no further disruption except minor shifts to achieve final project configuration ~~to traffic~~, and the sidewalk on the south side of EB Bruckner Blvd. is constructed and open to pedestrian traffic.

   This work includes but is not limited to: installation of primary and secondary shielding, retaining wall repairs within Amtrak ROW, retaining wall construction/modification and installation of fencing on top of retaining wall along Amtrak ROW, clearing, grubbing, demolition of Ramp N, construction of Ramp SN, and EB Bruckner Boulevard reconstruction from Barretto St. to the RR Bridge including all lanes, shoulders, sidewalks on the south side, drainage, utilities, signs, signals, and final pavement markings. This milestone does not include the following work: removal of Bruckner Expressway shielding adjacent to Amtrak ROW and superstructure repairs/painting on

the Expressway performed behind the shielding whether or not it requires Railroad Protection Services.

8. Bryant Ave. Pedestrian Bridge is defined as all temporary and permanent work associated with the replacement of the pedestrian bridge at Bryant Ave. Counting of Days will continue until all associated construction work is completed and the bridge is permanently opened to pedestrian traffic with no further disruptions. This work includes but is not limited to: foundations, substructures, superstructure, concrete deck, railing, fencing, and lighting.

   The Bryant Ave. Pedestrian Bridge may only be closed to pedestrian traffic between June 24 – September 4, 2023, and June 22 – September 2, 2024. During the closure periods, pedestrians shall be detoured in accordance with the OCMC permit. Construction impacting PS 75 school yard shall be limited to one of the above summer construction periods.

Table SCD - 2b

IMPACTS TO TRAFFIC (See Note 9)			
PROJECT COMPONENT	**TRAFFIC IMPACT DURATION (CALENDAR DAYS)**		**LIQUIDATED DAMAGES AMOUNT (PER DAY)** (See Notes 4 & 10)
BRUCKNER EXPRESSWAY RECONSTRUCTION (See Note 11)	Max Allowed 900		$90,000
BRUCKNER BLVD RECONSTRUCTION (See Note 12)	Max Allowed 900		$~~35~~0,000
TEMPORARY BRIDGE (See Note 13)	Max Allowed 650		$50,000

9. Traffic Impact Duration is defined as the number of consecutive Calendar Days between the date of the first traffic Impact Day for a given roadway and the date of the last Traffic Impact, in accordance with Notes 11, 12, & 13.

   a) Lane closures to collect engineering data in accordance with the OCMC Permit and the RFP may be performed without counting toward the Traffic Impact Duration provided no physical work of any kind is performed.

   b) Lane shifts may be performed on the Expressway without triggering the start of the Traffic Impact Duration provided that the number of existing lanes are maintained with minimum lane widths of 11'.

c) It is the Department's understanding that WZTC devices, lane tapers, drops, etc. may extend into adjacent approach and departure deck and ramp areas that are not included in the Design-Builder's intended active work area. These adjacent WZTC devices will not initiate counting of a Traffic Impact Day on adjacent non-active work areas unless the Design-Builder commences with some permanent work associated with these adjacent approach and departure locations.

d) Landscaping work, including vegetative plantings, is excluded from the counting of Traffic Impact Days.

10. Liquidated Damages will be assessed, in the amount indicated, for each calendar day or partial calendar day due to failure to achieve all necessary work associated with the Project Component as submitted by the Proposer and indicated in Table SCD-2b.

11. Bruckner Expressway Reconstruction is defined as all work associated with the reconstruction and widening of the Bruckner Expressway, from Bent 129 to the bridge carrying the Bruckner Expressway over the Railroad, that is required to open all lanes of the permanent roadway in its final configuration. Counting of Traffic Impact Days will begin upon commencement of the setup of necessary WZTC devices to facilitate any construction work on the Bruckner Expressway within these limits, and will continue until all phases of construction, and all work associated with the reconstruction and widening of the Expressway have been completed, and all travel lanes and shoulders may be open to vehicular traffic, in their final configuration, with no further disruption. This work includes but is not limited to: bridge widening, concrete deck, new foundations, substructure replacement, superstructure replacement, new abutment, retaining walls, at-grade PCC pavement, permanent concrete bridge and median barriers, utility relocations, deck/pavement grinding and grooving, drainage, final pavement markings, signs, sign structures, bridge railing, and bridge lighting.

12. Bruckner Boulevard Reconstruction is defined as all work associated with the reconstruction of Bruckner Boulevard, from Bent 129 to the bridge carrying Bruckner Boulevard over the Railroad, that will impact traffic, pedestrians, and local businesses. Counting of Traffic Impact Days will begin upon the commencement of the setup of necessary WZTC devices to facilitate any construction work on the Bruckner Boulevard within these limits, and will continue until all construction work is complete including the relocation of utilities, and the roadways, sidewalks, and shared use path are permanently open to vehicular and pedestrian traffic in their final project configuration, with no further disruption. This work includes but is not limited to: installation and removal of temporary bridge, final pavement, pavement markings, signs, signals, shared use path, barriers, sidewalks, utilities, and street lighting.

13. Temporary Bridge is defined as the detouring of traffic onto a temporary bridge to facilitate stage construction of the Bruckner Expressway and/or the ramps to Sheridan Boulevard. Counting of Traffic Impact Days will begin on the first day traffic is detoured onto a temporary bridge, and will continue until the last day that a temporary bridge is used to carry traffic.

Table SCD-3

PROJECT IMPACTS TO RAILROADS (See Note 14 and 15)					
PROJECT COMPONENT	**RAILROAD PROTECTION SERVICES BASE # OF SHIFTS** (See Note 18)		**RAILROAD PROTECTION SERVICES # OF SHIFTS PLUS 10% NO-SHOW** (See Note 19 and 20)		**LIQUIDATED DAMAGES AMOUNT (PER SHIFT)** (See Note 4 and 21)
WORK WITHIN AND ADJACENT TO AMTRAK ROW (See Note 16)	Max Allowed 200		Max Allowed 220		$20,000
BRUCKNER BLVD RECONSTRUCTION OVER NYCT TUNNEL (See Note 17)	Max Allowed 150		Max Allowed 165		$10,000

14. **Design-Builder Failure to vacate the railroad track area, resulting in train service delays:** in the event the DB's labor, equipment, and/or material fail to clear up to permit on time train services to pass the project site for any reason and the train service is delayed, the DB shall pay to the Department Liquidated Damages in the Amount of $2,000 per minute, per track, where the delay is experienced. Where tracks are de-energized, note that one hour shall be allotted for re-energization activities, prior to when the tracks shall be returned to service.

15. Project Impacts to Railroads is defined as any work requiring Railroad Protection Services from the Railroad to conduct work over and/or adjacent to a Railroad facility in accordance with Department, CSX, NYCT, and Amtrak guidelines.

16. Work Within and Adjacent to Amtrak ROW is defined as all work that is directly within and adjacent to the permanent easement of the Amtrak ROW, including work directly within the Amtrak ROW, the reconstruction of EB Bruckner Boulevard, the installation and removal of primary and secondary shielding for the Bruckner Expressway rehabilitation along the Amtrak ROW from approximate STA BE 95+45 to approximate STA BE 113+45, and the construction of Ramp SN, that requires Railroad Protection Services in accordance with the Project Requirements. This work includes but is not limited to: installation and removal of primary and secondary shielding, retaining wall repairs within Amtrak ROW, retaining wall construction/modification and installation of fencing on top of retaining wall along Amtrak ROW, clearing and grubbing within Amtrak ROW, demolition of Ramp N, construction of Ramp SN, and EB Bruckner

Boulevard reconstruction from Barretto St. to the RR Bridge including all lanes, shoulders, sidewalks on the south side of the Boulevard, drainage, utilities, signs, signals, and final pavement markings.

17. Bruckner Blvd. Reconstruction over NYCT Tunnel is defined as all work within the limits of WB Bruckner Blvd that requires NYCT Railroad Protection Services, in accordance with the Project Requirements. This work includes but is not limited to: temporary bridge installation and removal, construction of new foundations and substructures for Ramp SS, Bryant Ave pedestrian bridge, and WB Bruckner Expressway, pavement reconstruction, milling and resurfacing, sidewalk reconstruction, median reconstruction, drainage, and utilities.

18. A Railroad Protection Services Shift is defined as any Design-Builder work shift or partial shift that requires the presence of Amtrak protection personnel (flagger), NYCT protection personnel (flagger or inspector), and/or Amtrak ET personnel required for de-energizing or re-energizing the catenary lines. Regardless of whether the shift requires one or any combination of these services, for all or part of a shift, it shall be considered as one shift. A shift is defined to be an 8-hour work period for Railroad personnel. Note: Railroad Protection Services Shifts shall be counted at each location. Concurrent shifts (if permitted) shall be counted as a shift per work location.

19. A **"No-Show**" shift is defined as a work shift that requires Railroad Protection Services, is scheduled in accordance with Project Requirements, the availability of Protection Services is confirmed by the affected Railroads, and the Design-Builder is ready to work as scheduled, but work is delayed and qualifies as a reimbursable No Show event, or cancelled due to the No-Show of one or more Railroad Protection Services personnel. The Design-Builder shall anticipate a No-Show rate of 10%, in addition to the Base Number of Shifts bid, for Railroad Protection Services. No-Show shifts will not be counted against the number of Railroad Protection Services Shifts bid.

    No Show Compensation: In the event the Design-Builder (DB) is delayed or had to cancel a work shift due to Railroad Protection Services No-Show, then the DB may be compensated for the actual, verifiable and reasonable costs associated to the field operation that experienced the No-Show impact. In the event the crew and/or equipment is redeployed, that redeployed crew time, and/or equipment time, is not eligible for compensation. The provisions of the Contract shall apply that govern Extra Work and Time Related Delays, Section 109-05, and the provisions of Notice & Record Keeping in Sections 104-06. Any No-Show compensation approved for payment by the Department's Project Manager will be made with the Monthly Progress Payment utilizing Pay Item 800.04200015, Railroad No-Show Force Account Work.

    No-Show Compensation shall be limited to field construction work scheduled to be performed during the No-Show Shift. No-Show Compensation provisions will not apply to operations other than construction work activities. (i.e., field survey, field engineering, field measurements, QC Inspection, field meetings, appointments with the

Railroad, etc. shall all be excluded from reimbursement and be defined as Non-Compensable under the terms of the contract for the purpose of this section.)

The reimbursement shall be calculated as follows:

$$= \frac{Loss\ of\ work\ time\ due\ to\ "no\ show"\ in\ minutes}{Total\ work\ time\ available\ per\ shift\ in\ minutes} \times \$X\ [Design\ Builder's\ verifable\ cost]$$

*Whereby the ratio computed shall be greater then or equal to 0.15 to qualify as a reimbursable no-show event.

e.g. A delay in Railroad Protection Services results in a loss of 60 minutes of work time out of 180 minutes of available work time in an 8 hour shift (60 Minutes / 180 Minutes) = 0.33 > 0.15, therefore compensation is due for 1/3rd of the verifiable cost.

The No-Show Compensation amount is limited to a maximum amount compensable of $5 million in the fixed price lump sum Item 800.04200015. In the event the full value of this item has been paid to the Design-Builder and additional 'No Show' events continue to occur, no further reimbursement for 'No Shows' will be paid by any provision of the Contract by the Department. The No-Show costs in excess of the maximum amount payable will be borne by the Design-Builder.

THE DESIGN BUILDER'S ATTENTION IS DIRECTED TO THE FACT THAT THE NO-SHOW COMPENSATION PROVISIONS AS CONTAINED IN NOTE 19 HEREIN, SHALL NOT APPLY TO RAILROAD PROTECTION SERVICES REQUIRED THAT EXCEED THE BASE NUMBER OF SHIFTS BID ENTERED INTO TABLE SCD-3.

20. The Design-Builder's CPM schedule, as well as the Durations bid in SCD-2a and SCD-2b, must account for the Float necessary to include a 10% No-Show rate in addition to the Base Number of Shifts bid in SCD-3.

    In the event that the Railroad performance results in No-Shows less than 10% of the amount bid in the referenced tables, then no Time Related Delays will qualify as an excusable or compensable extension of time as a result of No-Shows. Notwithstanding this provision, and any other provision of the Contract including without limitation, DB 108-04, No-Show compensation may be compensable as stated in note 19 above.

    In the event No-Show delays are the exclusive reason for delays to the project's Completion Date, as documented in a Time Impact Analysis, on the project Critical Path, and cause the project completion date to be delayed, they may be found to be excusable and compensable in accordance with the provisions of Section 109-05, notwithstanding the Contract limitation in DB 108-04.

    Design Builder's CPM schedule requirements:

The Design-Builder is required to add an additional schedule activity that represents the 10% Railroad No-Show allowance in the schedule. The activity description shall be "***Railroad No-Show***" .

The activity shall be added to each of the following CPM schedule work locations which are listed in Table SCD 3:

- Work Within and Adjacent to Amtrak ROW
- Bruckner Boulevard Reconstruction over NYCT Tunnel

The computed 10% value shall be used as the Railroad No-Show activity duration consistent with the 10% values computed in Table SCD-3. The activity logic shall be a finish to start with the last activity that completes the work at each location and will therefor extend the location's schedule duration. The Contract Substantial Completion date must not be exceeded. One day of Railroad No-Show will be counted as one day on the CPM activity regardless of the actual impact to the schedule.

21. Liquidated Damages will be assessed for each additional shift required by the Design-Builder at any of the Project Components in excess of the number of Railroad Protection Services Base Number of Shifts bid and indicated in Table SCD-3. Note that Liquidated Damages shall be assessed based on the Base Number of Shifts Bid, not the Number of Shifts Plus 10%.

The Proposer commits to meet the Contract Durations specified above.

PROPOSER	
SIGNED	
DATE	
NAME (printed or typed)	
TITLE	

FORM SP
SCHEDULE OF PRICES

Proposer: _____

Item #	Item Name	**Price** (1)
800.06000115	Design Build – Construction Work	
800.06000215	Design Build – Construction Work	
800.06000315	Design Build – Construction Work	
800.06000415	Design Build – Construction Work	
800.06000515	Design Build – Construction Work	
800.06000615	Design Build – Construction Work	
800.06000715	Design Build – Construction Work	
800.06000815	Design Build – Construction Work	
800.06000915	Design Build – Construction Work	
800.06080115	Design Build – Concrete Retaining Wall Repair Work – Directive Repairs	
800.06060115	Design Build – Concrete Substructure Repair Work – Directive Repairs	
800.06070015	Design Build – Concrete Substructure Repair Work – Unanticipated Repairs	$1,000,000.00
800.06010115	Design Build – Steel Superstructure Repair Work – Directive Repairs	
800.06020015	Design Build – Steel Superstructure Repair Work – Unanticipated Repairs	$1,000,000.00
619.22970011	Traffic Enforcement Agents	$9,000,000.00~~XXXX~~
800.10000215	Design Build- Utility Related Work-Con Ed (Gas)	$52,986.08~~XXXX~~
800.10000315	Design Build- Utility Related Work- Con Ed (Electric)	$993,461.24~~XXXX~~
800.10000415	Design Build- Utility Related Work-ECS/Verizon	$XXXX
800.10000515	Design Build- Utility Related Work-Cablevision	$XXXX
800.04000015	Design Build – Extra Work	$25,000,000.00~~XXXX~~
800.04200015	Design Build – Railroad No-Show Force Account Work	$~~5~~3,000,000.00
	Subtotal A	

800.05000015	Design Build – Site Mobilization (Maximum 4% of Subtotal A)	
	Subtotal B (Sum of Subtotal A and Site Mobilization)	
800.01000015	Design Build – Design Services	
800.02000015	Design Build – Construction Inspection Services	
800.03000015	Design Build – Quality Control Services	
	TOTAL PROPOSAL PRICE	

Notes:

1.) Proposers shall complete Form SP using the excel spreadsheet located on the Department's Project web site.

2.) Subtotal B will be the value used to *calculate* the 30% Prime/DB self work requirement less any Self Performance Specialty Items included in Part 5 – Special Provisions.

Instructions:

1.) Enter Lump Sum Price for each Price Item in the white, non-shaded, cells.

FORM WPS
WORK PAYMENT SCHEDULE

WORK PAYMENT SCHEDULE NO. 1 – ITEM 800.06000115 BRUCKNER EXPRESSWAY BRIDGE REHABILITATION AND WIDENING BENT 133 TO BENT 142 (EXCLUDING BENT 142)		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[1]**
Work Zone Traffic Control	10%	
Demolition and Removal of Existing Concrete Deck, Parapets, Railing, and Drainage System	15%	
Jacking and Removal of Existing Bearings and Pedestals	5%	
Removal of Existing Lighting, Signage, Overhead Sign Structure, VMS, and Installation of Temporary Lighting, Signage and Sign Structures	5%	
Construct New Substructures and Foundations for Widening	15%	
Construct New Superstructure for Bridge rehabilitation and Widening	25%	
Construct New Pedestals and Bearings	5%	
Concrete Deck Construction, Including Deck Widening, Concrete Barriers and Drainage System	25%	
Remove Existing Temporary Precast Barriers from Bent 129 to Bent 133 at the Median and WB side and Install Permanent Concrete Barriers	5%	
Install Bridge Lighting, ITS, VMS, Signage, Overhead Sign Structures, and Striping	5%	
Superstructure painting and Substructure sealing	10%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

WORK PAYMENT SCHEDULE NO. 2 – ITEM 800.06000215 BRUCKNER EXPRESSWAY BRIDGE RECONSTRUCTION BENT 142 TO NEW ABUTMENT		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[(1)]**
Work Zone Traffic Control	10%	
Construct New Substructures and Foundations from Bent 142 to New Abutment including Widening	25%	
Demolition and Removal of Existing Concrete Deck, Parapets, Railing, and Drainage System	15%	
Demolition and Removal of Existing Substructures and Superstructure	15%	
Construct New Superstructure from Bent 142 to New Abutment including Widening	25%	
Construct New Pedestals and Bearings from Bent 142 to New Abutment	5%	
Construct New Concrete Deck including Barriers, impact attenuators and Drainage System	15%	
Construct Mainline New Abutment, including Concrete Pavement and Approach Slab	10%	
Install Bridge Lighting, ITS, Signage, and Striping	5%	
Superstructure painting and Substructure sealing	5%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

WORK PAYMENT SCHEDULE NO. 3 – ITEM 800.06000315 EB BRUCKNER EXPRESSWAY EXIT RAMP TO SHERIDAN BLVD - RAMP SN BENT 145A TO BENT 165		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[(1)]**
Work Zone Traffic Control	10%	
Construct Ramp SN Approach between Bent 165 and Sheridan Blvd. Abutment and Install Permanent Concrete Barriers	5%	
Construct New Substructures and Foundations	30%	
Construct New Superstructure	50%	
Construct New Pedestals and Bearings	5%	
Construct New Concrete Deck including Barriers and Drainage System	15%	
Install Bridge Lighting, ITS, Signage, Overhead Sign Structures and Striping	5%	
Superstructure painting and Substructure sealing	5%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

WORK PAYMENT SCHEDULE NO.4 – ITEM 800.06000415 WB BRUCKNER EXPRESSWAY ENTRANCE RAMP FROM SHERIDAN BLVD - RAMP SS BENT 145A TO BENT 165		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[1]**
Work Zone Traffic Control	10%	
At-Grade Work to Accommodate Ramp SS foundations near NYCT subway tunnel	5%	
Construct Ramp SS Approach between Bent 165 and Sheridan Blvd. Abutment and Install Permanent Concrete Barriers	5%	
Construct New Substructures and Foundations	30%	
Construct New Superstructure	50%	
Construct New Pedestals and Bearings	5%	
Construct New Concrete Deck including Barriers and Drainage System	20%	
Install Bridge Lighting, ITS, Signage, and Striping	5%	
Superstructure painting and Substructure sealing	5%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

WORK PAYMENT SCHEDULE NO.5 – ITEM 800.06000515 BRYANT AVENUE PEDESTRIAN BRIDGE RECONSTRUCTION		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[1]**
Work Zone Traffic Control	10%	
Demolition and Removal of Existing Concrete Deck, Parapets, Railing, and Drainage System	10%	
Remove Existing Superstructures	10%	
Remove Existing Substructures and Existing Ramp Approach Fill Structure	10%	
Construct New Substructures, Foundations, and Ramp Approach Fill Structure	20%	
Construct New Superstructure	35%	
Construct New Pedestals and Bearings	5%	
Construct New Concrete Deck including Bridge railing, fence, and Drainage System	20%	
Install Bridge Lighting and Signage	5%	
Superstructure painting and Substructure sealing	5%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

WORK PAYMENT SCHEDULE NO. 6 – ITEM 800.06000615 WB BRUCKNER EXPRESSWAY TEMPORARY BRIDGE		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[1]**
Work Zone Traffic Control	10%	
At-Grade Work to Accommodate Temporary Bridge Reconstruction	5%	
Construct Temporary Bridge Approach, including Concrete Pavement, Approach Slab, Retaining Walls, and Fill	10%	
Construct Temporary Bridge Substructures and Foundations	15%	
Construct Temporary Bridge Superstructure	30%	
Construct Temporary Bridge Concrete Deck including Bridge Railing and Drainage System	20%	
Install Bridge Lighting, Signage, and Striping	5%	
Maintenance of Temporary Bridge	10%	
Demolition and removal of Temporary Bridge	15%	
At-Grade Restoration and Reconstruction	5%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	1% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	2% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

WORK PAYMENT SCHEDULE NO.7 – ITEM 800.06000715 BRUCKNER EXPRESSWAY, RAMPS TO AND FROM SHERIDAN BLVD, AND RAMP N DEMOLITION BENT 142 TO BENT 165		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[1]**
Work Zone Traffic Control	10%	
Demolition and Removal Ramp M from Bent 142 to Existing Abutment including Superstructures and Substructures, Abutment and Retaining walls, and Existing Ramp Approach Fill Structure	15%	
Demolition and Removal of Ramps to and from Sheridan Blvd from Bent 142 to Bent 165 including Superstructures and Substructures	60%	
Demolition and Removal Ramp P including Superstructures and Substructures, Abutment and Retaining walls	15%	
Demolition and Removal of Ramp N including Superstructures and Substructures, Abutment and Retaining walls, and Existing Ramp Approach Fill Structure	15%	
Demolition of Existing Shed at Bent 144 Hunts Point Ave Intersection	5%	
Remove Existing Lighting, Overhead Sign Structures, Signage, and Impact Attenuators	5%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

WORK PAYMENT SCHEDULE NO. 8 – ITEM 800.06000815 BRUCKNER BOULEVARD ROADWAY RECONSTRUCTION BENT 134 TO ALDUS STREET		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[(1)]**
Work Zone Traffic Control	10%	
Construction of New Water Mains, Combined Sewer and Drainage Systems	20%	
Relocation of Utilities	5%	
Pavement Reconstruction including Hunts Point Ave Intersection, EB Bruckner Blvd and WB Bruckner Blvd.	20%	
Pavement Milling and Resurfacing	15%	
Construction of Curbs extension and Sidewalks including New concrete barriers, Steel faced curbs and New Curb Ramps	10%	
Median Reconstruction, Including Concrete Walkways, Asphalt Non-Walkable Area, and Shared-Use Path	10%	
Construction of parking area under Bruckner Expressway from Hunts Point Ave to New Abutment including installation of concrete barriers with Decorative Fence, gates, underdeck lighting and pavement	10%	
Rehabilitation of the Retaining Wall along the Amtrak ROW and Construction of New Retaining walls, including Installation of Railroad Fence, Clearing and Grubbing, and Placing Gravel	10%	
Install Roadway Lighting, Underdeck Lighting, Landscaping Work and Fencing, Signage, and Striping	5%	
Install ITS System, New Traffic Signal, and Modify Existing Signals	5%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

WORK PAYMENT SCHEDULE NO. 9 – ITEM 800.06000915 BRUCKNER EXPRESSWAY ROADWAY RECONSTRUCTION NEW ABUTMENT TO BRIDGES OVER AMTRAK		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[(1)]**
Work Zone Traffic Control	10%	
Removal of Existing Pavement, Lighting, Striping, Overhead Sign Structures, and Signage	10%	
Construction of New Water Mains, Combined Sewer and Drainage Systems	10%	
Relocation of Utilities	5%	
Pavement Reconstruction from New Abutment to Bridges over Amtrak including Concrete barriers	40%	
Replacement of western approach slabs at Railroad Bridge including Concrete Barriers and Sidewalks	10%	
Construct Mainline Retaining Walls and Approach Fill including GRES walls during construction	25%	
Install Roadway Lighting, Overhead Sign Structures, Signage, and Striping	10%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

(1) Percent of Lump Sum Price to be completed by Proposer. Total percent for all Work Items shall equal 100%

(2) Subsequent to Selection of Best Value, the Design-Builder may submit to the Department a more detailed Work Payment Schedule which breaks individual work items into multiple stages, for the Department's review and acceptance. However, the sum of the percentages proposed for each stage shall equal the percentage for that work item submitted by the Design-Builder included on Form WPS, and in no case shall the payment for any individual stage be more than 50% nor less than 10% of the total percentage bid for that work item.

(3) Payment will be verified through the CPM Cost Loaded schedule per SP-8 and SP-3

Inspector – A representative of the Design-Builder or Department detailed to inspect methods of construction or fabrication and/or materials, equipment for Work both on and off the Site of the Project.

Plans - The official Design Plans and applicable Standard Sheets, which show the location, character, dimensions, and details of the Work to be performed. Also, the Design-Builder's Design Plans showing profiles, typical cross sections, and other details; Work Plans; or exact reproductions which show the location, character, dimensions, and general or specific details of the Work to be done.

Subcontractor – Any individual, firm, or corporation~~Person~~ with whom the Design-Builder has entered into a~~ny~~ Subcontract ~~(first-tier)~~ and any other individual, firm, or corporation~~Person~~ with whom any Subcontractor has further subcontracted any part of the Work at second tier (i.e., no third-tier subcontracting permitted). A Subcontractor is approved by the Department in accordance with §108-05 *Subletting or Assigning the Contract* to perform on-site work specifically required for the performance of the contract. ~~(second-tier). Third-tier subcontracting shall not be permitted.~~ Suppliers and materialmen are excluded from the term. The term does not include any employee with an employment contract, or any employee organization with a collective bargaining agreement, who with the written consent of the Department, sublets any part of the Contract.

B. The following definitions of terms are in addition to the definitions of terms set forth in NYSDOT Standard Specifications §101-02:

Accept/Acceptance - The confirmation provided by the Department that informs the Design-Builder that a submittal, deliverable, work product, or test result, is in conformance with the Contract requirements or NYSDOT standards.

Affiliate:

A. Any Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with the Design-Builder or any Principal Participant.
B. An Affiliate may also be any Person for which 10% or more of the equity interest in such Person is held directly or indirectly, beneficially or of record, by the following:
    1. The Design-Builder;
    2. Any Principal Participant; or
    3. Any Affiliate of the Design-Builder under part (A) of this definition.

For purposes of this definition, the term "control" means the possession, directly or indirectly, of the power to cause the direction of the management of a Person, whether through voting securities, by contract, by family relationship, or otherwise.

Alternative Technical Concept – A concept that deviates from requirements set forth in the contract documents which provides a solution equal to or better than the requirements set forth in the contract documents. The Department's prior written approval, in accordance with the Instructions to Proposers, *Alternative Technical Concepts (ATCs),* shall be required.

Basic Project Configuration – The basic information presented by the Department regarding the nature of the project to be constructed as documented in the RFP.

Betterment – Any upgrading of a utility facility that is not attributable to the construction of the Project, and is made for the benefit of and at the election of the owner or other third party;

Conformed RFP - The RFP that incorporates all of the contractual changes issued by the Department during the procurement in the form of an addendum. The Conformed RFP is

The Design-Builder shall submit a monthly progress report with each payment request, consisting of the following:

1. Quality Requirements (DB §106-02);
2. An Accident Report (DB §107-05);
3. A Security Report (Part 3 – Project Requirements, Section 2~~42~~), if required;
4. A monthly Progress Schedule update (DB §108-01A.4);
5. A Change Order Status Report (DB §104-02);
6. A monthly Subcontract report, including Civil Rights Reporting (DB §105-21);
7. Updated Submittals List (Part 5, SP-3, 3.3.4.2 (d) xxi); and
8. A summary of hazardous and contaminated substance activities (DB §107-13).

DB 108-02 COMPLETION DATE.

NYSDOT Standard Specification §108-02 shall apply.

DB 108-03 FAILURE TO COMPLETE WORK ON TIME.

For each calendar day, or any portion thereof, that any Work remains uncompleted after the contract completion date specified in the contract agreement, Liquidated Damages and/or Engineering Charges from the contract completion date to the final date of completion of the Work will be assessed against the Design-Builder. When specified in the contract documents, Liquidated Damages may also be assessed for each calendar day, or any portion thereof, for failure to complete certain portions of work, or for failure to comply with requirements shown in the contract documents including in-stream or in-water work restriction dates specified by environmental regulatory agencies. Liquidated Damages will be assessed not as a penalty, but as liquidated damages; provided however that due account shall be taken of any adjustment of the contract time for completion of the Work as provided for elsewhere in the specifications.

The Design-Builder shall pay liquidated damages to compensate the public for detriment experienced by the public as defined in Part 5 – Special Provisions and/or specified in this DB §108-03.

The Department shall have the right to deduct any amount owed by the Design-Builder to the Department under the Contract Documents, including liquidated damages, from any amounts owed by the Department to the Design-Builder. Liquidated damages, shall be payable by the Design-Builder to the Department within 10 days after the Design-Builder's receipt of an invoice therefore from the Department.

A. Engineering Charges. Engineering Charges include all appropriate engineering and inspection expenses incurred by the State, its consultants and inspection agencies, and by railroad companies.

Engineering Charges will be assessed in cases where the Work has been unduly delayed by the Design-Builder because of unwarranted reasons, inefficient operation, or for any other reason for which the Department determines the Design-Builder to be responsible. Reasonable time necessary for reviews of shop drawings by the State or its agents, for changes or additions to the Work to meet field conditions which do not significantly affect the scheduled completion of the contract, delays incurred by seasonal and weather limitations, localized labor actions and shortages of supplies or materials, and other situations which should be anticipated are neither compensatory nor eligible for extensions of time without the assessment of Engineering Charges, except as provided for under DB §108-04 *Delay Provisions*.

Before assessing Engineering Charges, the Department will give due consideration to factors attributing to such delay due to extenuating circumstances beyond the control of the Design-Builder limited to the following:

Builder's design, submission, action or inaction or the Design-Builder's means and method of construction.
5. Restraining orders, injunctions, or judgments issued by a court which were caused by Design-Builder's submission, action or inaction or means and method of construction.
6. Any labor boycott, strike, picketing or similar situation.
7. Any shortages of supplies of materials required by the contract work.
8. Climatic conditions, storms, floods, droughts, tidal waves, fires, hurricanes, earthquakes, landslides, acts of terrorism, nuclear events, or other catastrophes causing direct physical damage. However, payment may be made for repairing damage to the Work caused by an "occurrence" as provided in DB §107-09 *Damage*.
9. Additional Contract Work or Extra Work which does not impact the Critical Path or affect the overall completion of the Contract, delays in the review or issuance of Change Orders, or field change sheets or delays within the established time periods for consultation and written comment for Design Documents, Working Plans, other submittals and construction details, means and methods.
10. Any situation which was within the contemplation of the parties at the time of entering into the contract.
11. Award of the contract by the State more than forty-five (45) days beyond the letting date.
12. Correcting any materials or Work rejected either by the Design-Builder or the Department, or Work unsatisfactory to the Department for which payment has been withheld. Refer to DB §104-05; and DB §106-08.
13. Any other matters not caused by the Department or beyond its control.

DB 108-05 SUBLETTING OR ASSIGNING THE CONTRACT.

Unless indicated otherwise in a Project Labor Agreement, the Design-Builder shall perform Work with a value of at least 30% of the Contract Price with its own forces. Work performed by any Principal Participant, including any of the Design-Builder's joint venture members, general partner(s), subconsultants, and their affiliates, is considered Work with the Design-Builder's own force. However, the Design Services cost, the Construction Inspection cost, and the Materials Testing cost will be excluded from the calculation of the 30%.

The Design-Builder is responsible for all work performed by Subcontractors, Trucking Firms, Manufacturers, Fabricators, Material Suppliers, Services and any other parties in the performance of the contract, regardless of whether Department approval has been obtained. The Design-Builder shall not enter into any subcontract with any person or firm listed as debarred from government contracts by the New York State Department of Labor on https://applications.labor.ny.gov/EDList/searchPage.do or by the Federal Government, General Services Administration on https://www.sam.gov/SAM/ .Work shall be performed only by Subcontractors and Truckers specifically approved by the Department's Project Manager, and work shall not begin prior to approval by the Department's Project Manager. Subcontractors are permitted to subcontract any part of the contract to a second-tier Subcontractor. However, work shall not be assigned by a second-tier Subcontractor to a lower tier subcontractor (i.e., no third-tier subcontracting permitted). ~~Work may not be assigned beyond the Design-Builder's Subcontractor's Subcontract.~~ Work by a non-approved Subcontractor or Trucker will be suspended by the Engineer and payment for work by a non-approved Subcontractor or Trucking Firm may be withheld.

A. Subcontractors. Except as provided below, Subcontractor approval is required for:
- Firms performing on-site work as defined in the contract documents.
- Firms performing the on-site maintenance of previously furnished and installed products.
- Firms delivering materials to the contract site and incorporating them directly into the Work by the firm's on-site work force.

Subcontractor approval is not required for:

- Manufacturers, Fabricators and Material Suppliers who do not incorporate supplies or materials directly into the contract work.
- Service Work which is not accounted through labor, equipment and materials, including, but not limited to Work Services and Professional Services.
- Off-Site Trucking and Material Delivery.
- Owner/Operator Trucking, both on-site and off-site.

1. Subcontractor Approval. Prior to approval of a Subcontractor by the Department, the Subcontractor shall file and have approved a completed Form CCA-2 New York State Vendor Responsibility Questionnaire - For Profit Construction with the Contract Management Bureau.

If a Design-Builder is not SSPC certified, Subcontractors performing structural paint removal operations and painting work shall be SSPC certified or alternatively certified by the Department in accordance with DB §105-03 *Methods and Equipment*.

The Design-Builder shall submit Subcontractor approval requests to the Regional Construction Group for approval by the Department's Project Manager. For each Subcontractor, the Design-Builder shall submit the following:

- AAP20 *D/M/WBE Participation Worksheet* (if applicable)
- CONR89 *Approval to Subcontract*
- Labor affidavit Form AC 2948 *Subcontractor's Certification*
- HC108 *Subcontractor's Certification - Project Specific Safety and Health Plan*;
- Proof of Insurance in accordance with DB §107-06 *Insurance*;
- *Design-Builder/Subcontractor SPDES Permit Certification* (if there is a contract SPDES Permit)
- *CONR1 Vendor Assurance of No Conflict of Interest or Detrimental Effect*, signed by an authorized executive or legal representative of the firm.

The Department reserves the right to suspend or withdraw its approval of subcontractors where the Department determines it is in the best interest of the State to do so, including, but not limited to a Subcontractor's failure to comply with Health and Safety requirements, failure to comply with the terms of the Contract, and/or failure to remain a responsible subcontractor for the entire duration of the Contract.

2. Subcontract Provisions. The Design-Builder shall incorporate by reference or otherwise include these provisions in every Subcontract and shall require that the same reference or inclusion be contained in every Subcontract entered into by any Subcontractor. All Subcontracts shall be in writing and shall contain all pertinent provisions of the contract in regard to Federal and State Laws and Regulations. Upon request, the Design-Builder shall provide a copy of any requested written subcontract. All Subcontractors shall maintain insurance coverages as required by DB §107-06 *Insurance*.

All subcontracts, supply or equipment contracts in excess of $10,000 shall incorporate the provisions of DB §102-11 *Equal Employment Opportunity Requirements*. The provisions may be incorporated by reference.

All subcontracts shall incorporate the provisions of DB §105-21 *Civil Rights Monitoring and Reporting*. The provisions may be incorporated by reference.

All subcontracts shall incorporate the provisions of DB §107-16 *Ensuring Pay Equity by State Contractors*. The provisions may be incorporated by reference.

All subcontracts shall incorporate the provisions of DB §108-05D. *Title VI Assurance*, including supply and equipment contracts, unless exempt by 49 CFR 21, or directives issued pursuant thereto. The provisions may be incorporated by reference.

SECTION 1 GENERAL

1.1 PURPOSE

This Part 3 establishes the basic Requirements of the Project. The Contract Documents, NYSDOT standard drawings, manuals and specifications, and the referenced Design Codes and Manuals shall be followed for the preparation of design and construction documents and the execution of the Work. Any proposed deviation from the Contract requirements or NYSDOT standards shall be submitted to the Department's Design Quality Assurance Engineer for review and shall require the submission of a ~~Non-conformance Report or~~ request for Design Exception per Section 5.5, where the Design-Builder is to identify, explain, and justify any deviation from the established criteria to the Department's Design Quality Assurance Engineer.

All designs shall be prepared in U.S. Customary units. The Design-Builder shall be responsible for converting any mapping, plans, etc. into U.S. Customary units as necessary for the completion of the Project.

The design and construction shall be in conformance with the latest edition of the New York State Department of Transportation, Standard Specifications, with addenda, issued by the Office of Engineering, current as of the date of Proposal submission, excluding Section 100, which is superseded by Part 2, Section DB 100 of the Contract Documents, and except as otherwise noted in these Contract Documents.

The Design-Builder shall prepare Project Specifications for the Project, for Work Items not covered by the NYSDOT Standard Specifications or applicable Special Specifications, and shall prepare Design Plans for the Project in accordance with NYSDOT standards for general content and format, and in accordance with the Contract and subject to Department approval.

The Design-Builder shall prepare and submit a Non-conformance Report (in accordance with the provisions of DB §105-11C) for any Work proposed to be or actually performed that does not conform to the Contract requirements and for any deviations from NYSDOT standards.

1.2 SCOPE

The Design-Builder shall be responsible for complying with all terms of the Contract Documents. The Design-Builder shall review and understand all terms and conditions of the Contract Documents prior to the commencement of the Project and shall be responsible for determining the full Scope of the Project by undertaking a thorough examination of the Contract Documents, the Reference Documents and the Project Site.

1.3 SCOPE OF WORK – MAJOR ITEMS

The scope of work for the Project includes but is not limited to the following items:

A) BIN 1066669 Bruckner Expressway;
   a. Rehabilitation of Bruckner Expressway between Barretto Street and Hunts Point Avenue
      i. Structural Strengthening
      ii. Replacement of concrete bridge deck
      iii. Concrete and Steel repairs
      iv. Replacement of concrete bridge barrier
      v. Replacement of bearings and pedestals
      vi. Structural steel painting

- HEC 23 Bridge Scour and Stream Instability Countermeasures
- Manual of Uniform Traffic Control Devices (MUTCD)
- Standard Highway Signs and Markings (SHSM) Book
- Steel Bridge Design Handbook
- Technical Advisory T6640.8A, 10/30/87 (environmental analyses)
- Traffic Monitoring Guide

IEEE:

- IEEE 1455-1999 Standards for Message Sets for Vehicle/Roadside Communications

ITE:

- ITE TMDD v3 Traffic Management Data Dictionary (TMDD) Requirements

NFPA:

- NFPA 70 – National Electrical Code (NEC)
- NFPA 70E – Standard for Electrical Safety in the Workplace
- 502: Standard for Road Tunnels, Bridges, and Other Limited Access Highways (New York City Fire Code, Appendix B Reference Standard Modifications modifies the 2011 version of NFPA 502)

NYCDOT:

- Specifications for furnishing all labor and material necessary and required for the installation, removal or relocation of street lighting equipment in the City of New York
- Standard Specifications, Bureau of Highway Operations
- Standard Specifications, Traffic Signals & ITS Systems
- Standard Drawings, Division of Street Lighting
- Standard Details of Construction, Bureau of Highways, Roadway Design
- Street Design Manual
- Department of Design and Construction Design Guidelines and Directives
- Guidelines for the Maintenance and Protection of Traffic Plan for Cycling
- ~~Stormwater Manual~~

NYSDEC:

- Standards and Specifications for Erosion and Sediment Control (SESC)
- Stormwater Management Design Manual (SMDM)

NYSDOT:

- Annual Report titled "Axle Factor Update"
- Approved Materials List
- Bridge Detail (BD) Sheets US Customary (NYSDOT BD Sheets)

WORK PAYMENT SCHEDULE NO. 1 – ITEM 800.06000115 BRUCKNER EXPRESSWAY BRIDGE REHABILITATION AND WIDENING BENT 133 TO BENT 142 (EXCLUDING BENT 142)		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)(1)**
Work Zone Traffic Control	10%	
Demolition and Removal of Existing Concrete Deck, Parapets, Railing, and Drainage System	15%	
Jacking and Removal of Existing Bearings and Pedestals	5%	
Removal of Existing Lighting, Signage, Overhead Sign Structure, VMS, and Installation of Temporary Lighting, Signage and Sign Structures	5%	
Construct New Substructures and Foundations for Widening	15%	
Construct New Superstructure for Bridge rehabilitation and Widening	25%	
Construct New Pedestals and Bearings	5%	
Concrete Deck Construction, Including Deck Widening, Concrete Barriers and Drainage System	30%	
Remove Existing Temporary Precast Barriers from Bent 129 to Bent 133 at the Median and WB side and Install Permanent Concrete Barriers	5%	
Install Bridge Lighting, ITS, VMS, Signage, Overhead Sign Structures, and Striping	5%	
Superstructure painting and Substructure sealing	10%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

WORK PAYMENT SCHEDULE NO. 2 – ITEM 800.06000215 BRUCKNER EXPRESSWAY BRIDGE RECONSTRUCTION BENT 142 TO NEW ABUTMENT		
WORK ITEM	**MAXIMUM PERCENT OF LUMP SUM PRICE**	**PERCENT OF LUMP SUM PRICE (To be completed by D-B)[1]**
Work Zone Traffic Control	10%	
Construct New Substructures and Foundations from Bent 142 to New Abutment including Widening	25%	
Demolition and Removal of Existing Concrete Deck, Parapets, Railing, and Drainage System	15%	
Demolition and Removal of Existing Substructures and Superstructure	15%	
Construct New Superstructure from Bent 142 to New Abutment including Widening	25%	
Construct New Pedestals and Bearings from Bent 142 to New Abutment	5%	
Construct New Concrete Deck including Barriers, impact attenuators and Drainage System	15%	
Construct Mainline New Abutment, including Concrete Pavement and Approach Slab	10%	
Install Bridge Lighting, ITS, Signage, and Striping	5%	
Superstructure painting and Substructure sealing	5%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-09)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-09)	2% (fixed)	2% (fixed)

by the Design-Builder are being followed and that Contract requirements continue to be met. The Design-Builder shall specifically highlight, check and bring to the attention of the Department any changes to information presented at previous design reviews. The Design-Builder shall submit final design for Consultation and Written Comment by the Department's Design QA Engineer.

5.8.4 Release for Construction Review

The Release for Construction Review shall be the Design Review after Final Design. The Design-Builder and the Department shall use the Release for Construction Review to verify that the concepts and parameters established and represented by the Design Builder are being followed and that Contract requirements continue to be met. The Design-Builder shall specifically highlight, check, and bring to the attention of the Department any changes to information presented at the Final Design stage. The Design-Builder shall present the information for Release for construction review to the Department for Consultation and Written Comment by the Department's Design QA Engineer.

By submitting the Release for Construction Packages, the Design-Builder is confirming that the following items have occurred:

A) The Designer has conducted its design QC checks throughout the design process in compliance with the Quality Control Plan and certifies in writing that the design is complete to the appropriate level or stage of review, checked and ready to be released for construction;

B) The Design QC Engineer has signed the title sheet for the drawings, certifying the following (the title sheet can be formatted to include the items of certification):

   1) Design checks have been completed;

   2) Work conforms to Contract requirements;

   3) Any deviations or design exceptions have been approved in writing by the Department;

   4) Design QC activities are following the Design-Builder's Quality Control Plan; and

   5) All outstanding issues or comments from Design Reviews have been resolved;

C) The Responsible Engineer has signed all drawings prepared under his/her direction. For those drawings and documents included in the submittal that are prepared by a Manufacturer or Supplier or other Persons not under his/her direct supervision, the Responsible Engineer will affix a stamp that indicates the design shown on the sheet or document conforms to the overall design and Contract requirements;

D) The Design Manager has signed the title sheet to the drawings certifying to the items contained in Section 3.2.4.2~~3~~. (The title sheet can be formatted to include the items of certification);

E) The design has undergone constructability review and is constructible as represented;

F) Work Plans, Project Specifications and related documents for the portion of the Project to be constructed are complete and checked in accordance with this Section 5.8;

and meet with the Department to resolve outstanding comments and dispositions. Resubmissions of Design Units may be required in order to resolve comment.

5.9 SCHEDULE FOR DESIGN CHECKS AND REVIEWS

The Design-Builder is responsible for scheduling and conducting Design Reviews to meet design and/or construction needs of the Baseline Progress Schedule. It is recognized and anticipated that the Design Review process and frequency, duration and intensity of Design Reviews may vary with the complexity of the individual Design Units and the associated construction activities. The duration of Design Reviews shall be discussed and mutually agreed between the Department and Design-Builder during the Design Workshop (Section 5.11.1) and verified and modified by mutual agreement during the course of the Project. The Design-Builder shall give written notice of scheduled Design-Reviews to the Design Quality Assurance Engineer at least one week prior to any review.

The Design-Builder shall include the agreed Design Review schedule for all Design Units as part of the Baseline Progress Schedule. The Design Review schedule shall be reviewed monthly. The Design-Builder shall not schedule more than two concurrent Design Reviews per discipline without the Department's concurrence.

Except for As-Built Plans, plans to be reviewed shall be in the form of sufficient copies of Design Plans and Project Specifications and supporting data and reports assembled for review to accommodate participants in the Design Review(s).

The Design-Builder shall make specified submittals of checked designs in accordance with Section 5.7~~8~~. Submissions shall be complete for each Design Unit, but may be combined for multiple Design Units at any one time upon the Department's concurrence. The Design-Builder shall submit each Design Unit for Consultation and Written Comment by the Design QA Engineer. The Design-Builder shall provide written responses to all comments provided by the Design QA Engineer.

For each Design Unit, the Design-Builder shall include design checks and Design Reviews as indicated in Section 5.8, and such additional reviews as may arise. The Design-Builder shall allow the time for the Department's participation and input to any Design Review conducted by the Design-Builder's Design QC Engineer. The Design-Builder shall incorporate this schedule into Design-Builder's Baseline Progress Schedule and report progress and updates in the monthly updates. The Design-Builder shall keep the Department up to date on exact timing of reviews and Release for construction Design Reviews through the scheduled progress meetings.

5.10 COMMON DESIGN DOCUMENTS

Certain types of Design Documents are required for all elements and engineering disciplines. In addition to the Submittal requirements listed in each Section of the Technical Provisions, the Design-Builder shall prepare and submit the following Design Documents for every element and engineering discipline.

5.10.1 Design Criteria Report

The Contract Documents provide design criteria for some designs. The Design-Builder shall develop design criteria for the remaining designs. The Design Criteria Report shall identify how the requirements of the Contract Documents have been interpreted in terms of the configuration, performance, and all other requirements. Design Criteria shall also specify the relevant editions

6.5.2 Construction Quality Control Engineer

The Design-Builder shall assign a full time on-site Construction QC Engineer, who may be the Resident Engineer working for the Independent Construction Inspection Professional Engineering Firm as described in Section 6.2.1. This individual shall meet the minimum qualifications as described in Section 3.2.4.4~~3.4~~.

The Design-Builder's Construction QC Engineer shall be responsible for overall management and supervision of the Design-Builder's construction QC programs and shall be a New York-licensed professional engineer. The Design-Builder's Construction QC Engineer shall report directly to the Design-Builder's Quality Manager. The Design-Builder's Construction QC Engineer shall also maintain open and frequent communication with the Department's Construction QA Engineer.

The Design-Builder's Construction QC Engineer, or his/her designees, shall be granted the authority to make needed improvements to the quality of Work, including the suspension of the Work if required.

The Design-Builder's Construction QC Engineer shall be responsible for coordinating the schedules of construction QC Inspectors with the Design-Builder's construction activities so as not to delay Design-Builder's operations due to Construction QC Inspection, sampling, and testing activities. Daily interaction between the Design-Builder's QC staff and the Department's QA staff will be a critical element to avoid delay of the Design-Build operations and schedule.

6.5.3 Staffing Levels

The actual size of the field/Site staff shall reflect the complexity, needs, shifts and composition of QC activities consistent with Work in progress. See Section 6.2.3 for staff qualifications and certifications required.

Minimum staff requirements are described in Section 3.

The resumes of the staff shall be submitted to the Department's Construction QA Engineer for review. Any QC staff not having the qualifications or certifications specified will be removed from the Project and replaced with a person qualified for that position (see Section 6.2.3).

At any time that any QC staff causes the Department's QA Engineer to have concerns regarding their competency, the actions in Section 6.4 shall apply.

The Design-Builder shall obtain Department approval before removal or dismissal of any construction QC staff.

The QC staffing schedule shall be updated as necessary throughout the Contract duration to reflect accurate forecasting of QC staffing requirements.

6.6 QUALITY CONTROL LABORATORIES

Laboratory QC testing shall be conducted by testing laboratories, retained by the Design-Builder or the QC Engineering firm under subcontract, that comply with the requirements for Department certification for applicable tests. Laboratories shall be accredited by the AASHTO Material Reference Laboratory (AMRL), the Concrete Cement Reference Laboratory (CCRL), the National Precast Concrete Association (NPCA) for precasters, and the Prestressed Concrete Institute (PCI), as appropriate for the work being constructed. Department certification shall be obtained

Notice of Intent, MS4 SWPPP Acceptance, SWPPP Preparer Certification, Owner/Operator Certification and Notice of Termination Forms and Instructions are located at:

http://www.dec.ny.gov/chemical/43133.html

7.3.4 Threatened and Endangered Species Coordination

NYSDOT made a preliminary determinations of "No effect - no habitat" for the piping plover, green turtle, Kemp's ridley turtle, loggerhead turtle, and leatherback turtle and "May Affect, but not likely to Adversely Affect" for the Atlantic sturgeon and shortnose sturgeon. Furthermore, pursuant to 6 NYCRR Part 182, NYSDOT has determined that the project is not likely to result in a take or taking of the aforementioned species, and is therefore not subject to regulation under this Part. FHWA concurred with the NYSDOT's ESA effect determination in a letter received on August 24, 2018. In a letter dated August 6, 2018, NOAA NMFS concurred with the joint lead agencies' effect determinations and stated that the proposed action is not likely to affect any NMFS ESA-listed species or designated habitat.

7.3.5 Asbestos Containing Materials

An Asbestos Screening was conducted in accordance with the NYSDOT TEM ~~(~~Section 4.4.19, Asbestos~~)~~, and included a limited site reconnaissance (i.e., windshield survey) and review of available project-specific documentation. The documents reviewed included historic Sanborn Fire Insurance Maps, historic as-built drawings, and BIN folders to screen for the potential presence of ACM. For additional information, refer to the FEIS/ROD, Chapter 4, Section 4.4.19, located as a Reference Document on the Project Web Site.

An Asbestos Screening and Assessment of the impacted right-of-way and structures was performed by a NYS Department of Labor licensed firm using certified inspection staff. Asbestos Containing Materials (ACMs) identified during this screening/assessment were sampled and positively analyzed for asbestos content; suspect asbestos-containing materials are presumed positive. The Technical Memorandum/Asbestos Assessment ~~Report Contract 3 Addendum dated XXXX~~ is located in Part 7 – Engineering Data.

The Design-Builder shall be responsible for the abatement design, asbestos abatement, waste disposal and any required project monitoring/compliance air sampling during abatement of all confirmed and assumed asbestos containing materials if such materials will be disturbed during the performance of the Work. All asbestos abatement and waste disposal shall be performed in accordance with applicable safety and health codes and all applicable State and Federal regulations. See also Section 6.7, Asbestos.

The Design-Builder (in particular, the lead constructor on the Design-Build team) is also made aware that 12 NYCRR 56 specifically prohibits the abatement contractor from directly contracting project monitoring and/or compliance air monitoring services. In order to comply with this regulatory requirement, no Principal Participant may perform any asbestos abatement work for this Project. The Design-Builder shall subcontract asbestos abatement and Project monitoring/compliance air sampling services to separate and independent firms.

If during the course of work, any asbestos-containing materials not already documented in the asbestos screening/assessment report or Project record plans are encountered and require disturbance, the Design-Builder shall be responsible for any needed additional asbestos assessment, abatement design, asbestos abatement, waste disposal, and Project

monitoring/compliance air sampling. All additional work shall be paid for under the Extra Work pay item.

New York State Department of Labor (NYSDOL) asbestos licensure and applicable staff certification(s) are required for Work where confirmed or presumed asbestos-containing materials are impacted. All necessary asbestos assessment and Project design Work shall be performed in conformance with policy and guidance provided in NYSDOT's The Environmental Manual (TEM).

Any ACMs associated with private utilities located within the Project limits shall be the responsibility of the private utility owner. The Design-Builder shall coordinate with the private utility owners for the remediation of any ACMs which may be identified.

7.3.6 Hazardous Materials

A Hazardous Waste/Contaminated Materials Screening was conducted for the Project. The purpose of the screening was to identify the potential areas of environmental concern (AOCs) based on known or suspected presence of hazardous waste and/or contaminated materials that could impact the limits of proposed construction or property acquisition for this project. Please refer to the FEIS, Chapter 4, Section 4.4.20 Hazardous Waste and Contaminated Materials for additional information.

Soil excavated during construction shall be considered potentially contaminated non-hazardous for estimating re-use and off-site disposal requirements and shall be managed in accordance with NYSDOT Standard Specification 205 – Contaminated Soil. All costs associated with this work are the responsibility of the Design-Builder. This includes the preparation of a Contaminated Material Handling Plan to provide procedures for the proper handling, testing, reuse and/or disposal of excavated material, and preparation of a Health and Safety Plan to include procedures for monitoring, and mitigating as necessary, worker and community exposure to contaminated soils during construction.

For contaminated hazardous soils encountered and requiring disturbance within the project limits, the Design-Builder shall be responsible for and include the cost in their proposal for any needed excavation, stockpiling, assessment, handling, sampling, testing, and Project monitoring/compliance. The Department will only pay, out of the Extra Work Item, the actual verifiable costs for transportation and tipping fees associated with contaminated hazardous soils removed from the project site which exceed 500 CY. The Design-Builder shall be responsible for the work and cost associated with contaminated water, collection, containment, and disposal fees encountered during dewatering operations.

7.3.7 Migratory Bird Protection and Avoidance

Prior to commencing vegetation clearing and bridge work, a nest survey shall be completed to identify any active nests of bird species protected by the Migratory Bird Treaty Act (MBTA). See the Migratory Bird Protection and Avoidance Special Provision 154 in Part 5 for requirements and procedures.

7.3.8 Environmental Plan Deliverables

Deliverables shall be as stated elsewhere in the RFP documents.

10.2.3 Right of Way Markers

The Design-Builder shall monument all Permanent Easements and FEE acquisitions with low type concrete monuments in accordance with the NYSDOT Highway Design Manual and NYSDOT ROW Mapping Procedure Manual.

10.2.4 Identifying Impacts to Adjacent Properties

When the Design Builder has progressed the project design to a point that the impacts to adjacent properties are known, the Design Builder shall schedule a meeting (similar to a "Taking Line Review Meeting", as referenced in the Highway Design Manual Chapter 5) with the Department's Project Manager who shall additionally invite representatives from the Regional Design Office and the Regional Right of Way Office. The Design Builder shall present its detailed design solutions and confirm that their solution is compliant with the ROW acquired for the project.

10.2.5 Railroad Right of Way – Right of Entry

In order to perform the Work, the Design Builder will have to access the project site by entering property controlled by CSXT and property controlled by Amtrak. The Design Builder shall adhere to the railroad property access requirements while working on property under the control of either Amtrak or CSXT. As soon as practicable after contract award, the Department's Project Manager will convene a meeting with Amtrak, CSXT, and the Design Builder for the purpose of:

A. Coordinating and confirming the Design Builder's work schedule;
B. Determining timeframes necessary for access to railroad property;
C. Assuring the Design Builder's employees' possess the required safety training from Amtrak and CSXT;
D. Scheduling and coordinating to ensure the presence of required flaggers and other protocols of Amtrak and CSXT are followed.

Additional railroad requirements are included in Part 5 Special Provisions. Special Provision 121 includes information relevant to the Design-Builder for working with CSXT. Special Provision 132 includes information relevant to the Design-Builder for work with Amtrak. Special Provision 143 includes information relevant to the Design-Builder for work with NYCT.

10.2.5.1 CSX Requirements

The Design-Builder shall obtain Right of Entry Permit with CSXT. The Access Requirements for CSXT Property are below:

A. The Design Builder shall adhere to the railroad property access requirements while working on property under the control of CSXT.
B. CSXT Railroad is responsible for all flagging operations and separate coordination by the Design Builder with CSXT is required.
C. All field personnel must attend CSXT Contractor safety/security training, which is different from the Amtrak training. Contractor safety information is publicly available on CSX's website: https://www.csx.com/index.cfm/customers/value-added-services/property-real-estate/permitting-utility-wireless-infrastructure-installations-and-rights-of-entry/utility-permits/safety-requirements/#training
D. The Design Builder must enter into a separate Private Crossing agreement with CSXT should they need to cross the CSX tracks.

The Design-Builder shall adhere to CSXT requirements for design and construction including:

3. No work shall be scheduled on the following observed holidays: New Year's Day, Martin Luther King Day, President's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas.

J. Utilities: Before commencing the Work, verify and mark the location of all buried utility facilities in the vicinity of the Work through DIG SAFELY NY. Coordinate with Amtrak and CSX to have Railroads locate and mark their buried utilities, if required. Test pitting is required on some utilities. Prior to beginning work affecting any utility facility, submit to NYSDOT Project Manager for approval a plan for performing the work, with evidence of approval by the utility operator.

K. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by NYSDOT/Amtrak/CSXT or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated. Submit request to Project Manager and obtain written consent.

L. Controlled Substances: Use of tobacco products and other controlled substances on the project site is not permitted.

M. Employee Identification: Design Builder personnel working on the Project site shall require personnel to utilize identification tags at all times. Design Builder coordination through Amtrak shall require all personnel working on the Project site to complete the Amtrak Roadway Worker Protection (Safety) Program.

N. Employee Screening: Comply with NYSDOT and Amtrak's requirements regarding drug and background screening of Design Builder personnel working on the Project site. Maintain list of approved screened personnel with Contract Manager.

O. The cost for Railroad Protective Personnel, Engineering, and Construction Inspection provided by Amtrak will be included in a separate agreement between Amtrak and the Department.

10.2.5.3 Deliverables

~~Executed Right of Entry Permit with CSXT. (Refer to CSXT Public Projects Manual)~~
CSX ~~Approved~~ Required Insurance Certificates. (Refer to Special Provision 12~~1~~)
~~Executed~~ Temporary Permit to Enter with Amtrak. (Refer to Special Provision 13~~2~~)
~~Executed~~ Amtrak Certificate (Refer to Special Provision 13~~2~~)
Amtrak ~~Approved~~ Required Insurance Certificates. (Refer to Special Provision 13~~2~~)

10.2.6 NYC Department of Parks and Recreation

The Design-Builder shall submit Permit Applications (e.g. Permit to perform work on Park property, see example provided in reference documents) and Design Plans to NYCDPR for approval and obtain NYCDPR Permits for the Project prior to the start of construction. Design-Builder shall also review the requirements at both of Park's permit portals, see links below:

https://www.nycgovparks.org/permits/construction
https://www.nycgovparks.org/services/forestry/tree-work-permit

SECTION 14 STRUCTURES

14.1 SCOPE

The Design-Builder shall be responsible for all work necessary to complete the design and construction of all permanent and temporary structures required to complete the Project, including, but not limited to, bridge rehabilitation and widening, bridge replacements, retaining walls, barriers, sign structures, and miscellaneous structures. The design and construction of all structural systems and components shall provide functionality, durability, ease of maintenance and inspection, and safety.

The project will include rehabilitation, modification, construction, and/or demolition of the following structures:

- BIN 1066669 Bruckner Expressway from Bent 133 (Barretto Street) to Bent 142 (Hunts Point Avenue) – Rehabilitation including removal and replacement of concrete deck and concrete barriers, removal and replacement of bearings and concrete pedestals, removal and installation of overhead sign structures, bent repairs and modifications, concrete substructure protective sealing, structural steel repairs and modifications as needed, structural steel painting, and widening for new ramps SN and SS. For Bents 139, 140, and 141, the existing hammerhead piers that carry the WB Bruckner Expressway Ramp M shall be reconstructed, or extended as required, to meet the profile of the WB Bruckner Expressway.

- BIN 1066669 Bruckner Expressway from Bent 142 (Hunts Point Avenue) to Bent 165 – Demolition of viaduct including complete removal of the superstructure.

- BIN 1066669 Bruckner Expressway from Bent 143~~144~~ (Hunts Point Avenue) to Bent 164 – Demolition and removal of bents ~~144~~143 through 164.

- BIN 1066669 Bruckner Expressway from Bent 142 (Hunts Point Avenue) to new ML Abutment – Construction of new viaduct spans including retaining walls, foundations, Bent 142, 143A, 144A, 145A, and 146A, ML Abutment, structural steel, concrete barriers, concrete deck, structural steel painting and concrete substructure protective sealing.

    - For Bent~~s~~ 142 ~~and 143~~, completely remove the existing capbeam that carries the SB Sheridan Blvd. and EB Bruckner Expressway, as well as the columns that support the capbeam down to at least 2 ft. below existing grade. Construct new column extensions and capbeams. The entire pier that carries the WB Bruckner Expressway Ramp M is to be removed to at least the top of footing and a new pier shall be constructed.

    - Bents 143A, 144A, 145A, 146A and ML Abutment are new construction and shall not reuse any existing foundation elements.

- Construction of new ramps SN and SS including foundations, piers, structural steel, concrete barriers, concrete deck, structural steel painting, and concrete substructure protective sealing.

3. ***Specification Required*** indicates that the component shall meet the design specification.
4. When only a ***Rating Factor*** is provided, the component shall satisfy the ***Rating Factor*** requirement indicated but does not need to meet the design specification.
5. Steel substructure elements must have a rating factor equal to or greater than the rating factor required for the superstructure.
6. All bracing members (diaphragms, cross-frames, bottom laterals, etc.) and their connections shall not control the design or load rating.

The requirement to perform a seismic analysis is waived for all existing and modified superstructures and substructures. All other seismic provisions, including seismic detailing, shall apply to new and/or modified portions of existing substructures (including Pier 133). If necessary, existing substructures shall be modified to meet the minimum support length requirements of the NYSDOT LRFD Bridge Design Specifications or restrainers shall be installed.

The operational classification of all bridges in the project is Essential.

There is no requirement to perform a fatigue analysis or fatigue retrofits on existing spans.

All stages of construction must be analyzed and shown to be safe for legal loads as defined in EI 20-026. Load restrictions are not permitted.

14.3.1 Components

The use of any details that deviate from the NYSDOT Bridge Detail (BD) Sheets or NYSDOT Standard Sheets require an approved ATC or an approved RDE.

A) Barriers, Railings and Pedestrian Fencing: Temporary traffic barriers shall meet, as a minimum, the testing requirements of TL-3 and permanent traffic barriers shall meet, as a minimum, the testing requirements of TL-5.

Any reinforcement that is contained, originates, or terminates within a permanent barrier that is mounted on another component (i.e bridge deck, approach slabs, moments slabs, wingwalls, retaining walls, etc.) shall be stainless steel.

All permanent barriers shall be protectively sealed.

A pinned 24 in. temporary concrete barrier may be used as a temporary median barrier to facilitate opposing traffic with no allowance for a deflection zone.

Refer to Section 14.3.3~~2~~ for aesthetic requirements related to bridge parapet walls, bridge railing, and fencing, if any.

Relocate existing electrical conduit under the existing deck and embedded in the concrete bridge barriers. The new conduits shall be located inside the new concrete barriers.

B) Decks: Decks shall be cast-in-place and/or full depth precast panel with a 8.5 in. minimum final thickness after diamond grinding, use Type 1 aggregate, and have an integral wearing surface, unless otherwise noted.

superstructure that are carrying live load. This shall include disconnecting of diaphragms and isolating formwork and reinforcement at the stage line.

A third placement (closure placement) between longitudinal construction stages is required. Closure placements shall not be placed adjacent to cast-in-place deck pours for a minimum of 72 hours. The Design Builder shall use Ultra-High Performance Concrete in conformance with NYSDOT Special Specification Item 557.66010116 and the "~~Longitudinal~~ UHPC Joint Details" provided in Part 7.

Pinning of temporary barrier to new decks will be permitted with the following stipulations: Holes in new decks are made by either casting in a sleeve or coring. If coring, reinforcement shall be mapped out and coring will be performed to minimize the potential to cut through any reinforcement. Drilling holes in new decks is prohibited. After temporary barrier is removed all holes in the deck shall be repaired with Ultra-High Performance Concrete in conformance with NYSDOT Special Specification Item 557.66010116.

C) Precast Deck Panels: If precast deck panels are used, field cast joints between panels shall be made with Ultra-High-Performance Concrete (UHPC) in accordance with NYSDOT Special Specification Item 557.66010116. An integral precast concrete barrier may be used provided it is in accordance with NYSDOT Special Specification Item 557.11010003.

If all NYSDOT Bridge Manual conditions for use of isotropic reinforcement and Part 3 Section 14.3.1.B are met, isotropic deck reinforcement may be used in precast concrete deck panels. The provisions of the NYSDOT PCCM Article 6.2.3 shall apply except that any precast surface that is to be diamond ground and/or longitudinally grooved after installation shall have penetrating sealer applied after grinding and/or grooving operations in lieu of the requirement to coat all surfaces at the fabrication plant.

D) Deck Joints: The location of transverse and longitudinal deck joints shall be as indicated in Part 6-Directive Plans. A temporary expansion joint has been installed at Pier 165 during Contract 1 (D900047) and at Pier 133 in Contract 2 (D900051). These temporary joints, and any required adjacent portion of the existing deck, are to be removed to allow for the installation of the multi-cell modular expansion joint as shown on the Directive Plans.

All joint headers shall be constructed using stainless steel reinforcement.

Armorless joint seals shall meet the requirements of material specification 705-23, Foam-Supported Silicone. The use of preformed seals and preformed closed-cell foam is prohibited.

Existing transverse deck joints on the viaduct structure shall be eliminated by utilizing UHPC link slabs at the locations indicated on the Directive Plans. Refer to Part 5 SP-18 for requirements on the use of link slabs. Ultra-High Performance Concrete used for UHPC link slabs shall be per NYSDOT Special Specifications Item 557.66010116~~622040016~~. Longitudinal deck joints are not permitted unless shown in Part 6 – Directive Plans. Section 5.5.2 Longitudinal Joints of the NYSDOT Bridge Manual, requiring a longitudinal joint when the bridge width exceeds 90 ft., is waived.

E) Superstructure: Existing structural steel shall be assumed to be equivalent to ASTM A373-58T and have a yield strength (F_y) of 32 ksi and an ultimate strength (F_u) of 58 ksi. ASTM A709 Grade 50 structural steel shall be used for all new primary and secondary members.

All structural steel shall be painted. Refer to Section 14.3.32 for color requirements related to painted steel superstructure elements.

Fracture-critical members are not permitted. Repair deficient steel structural elements as shown in Part 6 Directive Plans; payment for this work will be made under item 800.06010115 Steel Superstructure Repair Work – Directive Repairs and the price bid should be based upon the total quantity shown including contingency. Steel repairs that may be required beyond that shown in Part 6 will be paid for by the Steel Superstructure Repairs Work – Unanticipated Repairs ~~Force Account~~ Item 800.06020015. All repairs shall bring members to their as-built capacity, at a minimum, or to the requirements of the Design Criteria Table, whichever is greater.

Sag camber of the girders is permitted on Ramps SS and SN but shall be minimized through the use of variable haunches, which shall not exceed a maximum height of 8 inches.

F) Bearings: Except for fully integral or fixed frame abutments and/or fully integral pier caps, all beam/girder supports shall utilize bearings that conform with Section 12 of the NYSDOT Bridge Manual or Part 7 Structural Details. Design and location of bearings shall provide for easy maintenance, accessibility, and future bearing replacement. For new superstructures, bearing replacement shall be easily accomplished via provided jacking points off the top of the substructure. Jacking points shall have sufficient capacity to lift the superstructure to permit future bearing replacement under live load with no additional strengthening of members required. The plans shall include the location of the jacking points and the jacking loads.

The use of tie-down devices, or any other type of bearing uplift restraints, is prohibited.

G) Substructures: Existing structural steel capbeams shall be assumed to be equivalent to ASTM 373-58T and have a yield strength (F_y) of 32 ksi and an ultimate strength (F_u) of 58 ksi.

Existing concrete shall be assumed to have a compressive strength (f'_c) of 3.5 ksi. Existing concrete reinforcement shall be assumed to have a yield strength of 40 ksi.

All concrete repair areas with exposed reinforcing bars greater than 1 sq. ft. shall utilize passive galvanic protection anodes in conformance with Item 582.99000016 - Embedment of Galvanic Anodes in Concrete. These anodes shall be of the type and spacing as shown in the Directive Plans.

Repair deficient concrete substructure elements in accordance with the Directive Plans. Payment for all work will be made under Item 800.06060115 Concrete Substructure Repair Work – Directive Repairs and the bid price shall be based upon the total quantity shown including contingency. Concrete repairs that may be required beyond the square footage shown in the Directive Plans will be paid for under the Concrete Substructure Repair Work – Unanticipated Repairs ~~Force Account~~ Item 800.06070015. Reinforcement damaged by concrete removal operations are the responsibility of the Design-Builder.

All concrete substructure repairs shall have a finish surface that is true to the existing unprepared concrete surfaces. The new repaired areas shall not be recessed nor protruding.

The structural capacity of any existing substructure or foundation that is permitted to be incorporated into the Design-Builder's proposed design, and is not visible pre-construction, shall be determined based on the as-built plans. In the event that such a substructure or foundation element is found to be deteriorated, as determined by the Department, any

14.3.3 Aesthetics

Aesthetic treatments for the bridge and all retaining walls shall be designed to complement each other and the surrounding context of the highway corridor. Textures, patterns, and concrete colors shall be used to accomplish this goal. The Design-Builder shall provide plans showing all aesthetic enhancements to be incorporated into the design, including but not limited to textures, patterns, and/or colors, to the Department for review and comment. At a minimum, aesthetic treatments shall include the following:

A) All new abutments, piers, retaining walls, and abutment wingwalls shall receive custom form liner architectural treatment in accordance with the details shown in Part 6 - Directive Plans. The Design-Builder shall construct a 6 feet x 6 feet concrete test panel for each wall type to be used - i.e. one test panel for a cast-in-place retaining wall or cast in place wingwall, and one test panel for a pre-cast retaining wall. Test panels shall be provided on site for review and approval by the Department's Project manager prior to the fabrication of final walls.

B) All structural steel (existing and proposed) shall be painted within the project limits in accordance with Part 6 – Directive Plans. All existing steel surfaces, including the inside of the steel pier caps and columns, shall be cleaned and painted consistent with NYSDOT Standard Specification Section 573 (Structural Steel Painting: Field Applied – Total Removal). Class A containment is required. All new structural steel shall be prepared and painted consistent with NYSDOT Standard Specification Section 572 (Structural Steel Painting: Shop Applied). Paint color shall comply with Federal Standard 595 No. FS 14223.

C) A coating type protective sealer, Item 559.16960118- Protective Sealing of Structural Concrete, that is compatible with the anti-graffiti coating shall be applied to all exposed substructure concrete (existing and proposed) within the project limits in accordance with Part 6 – Directive Plans. This requirement does not apply to BIN 2075351 and BIN 2075352.

D) Anti-graffiti protective coating conforming to the requirements of Special Specification 559.91100010 shall be used on all architecturally treated concrete surfaces, existing and proposed. For existing and proposed pier columns, anti-graffiti coating shall be applied to all sides.

E) UHPC shall be tinted to match the color of the adjacent concrete decks.

F) Permanent fencing shall be installed in accordance with the locations provided in Part 6 – Directive Plans, and the following details:

1) Decorative fence with gates under Ramps SS and SN, both on grade (8' height) and on top of concrete barrier (4' height) in accordance with Item 607.7XXYYN39.
2) 8' high steel fence in accordance with Amtrak requirements both on grade and on top of retaining wall along Amtrak ROW. Fence detail shall conform to Amtrak approved fence (Ameristar Impasse II Model, Trident 2-Rail Style) or approved equal. refer to Part 6 Directive Urban Design Plans for fence details and Part 7 for fence specifications.
3) 8' high chain link fence with gates for the area north of Bent SS-8.
4) 8' high chain link fence along Bryant Avenue Pedestrian Bridge and under the western ramps.
5) Chain link fence on top of temporary barrier (4' height) at contractor staging area.
6) Replace chain link fence in kind along school yard
7) Curved Protective Fence in accordance with Amtrak standards shall be installed along the proposed retaining wall from Bryant Ave. to the bridges over Amtrak.

14.4 DEMOLITION REQUIREMENTS

14.4.1 Scope

Refer to Section 14.1 for demolition scope of work.

All demolition related activities shall be performed between 7:00AM to 10:00PM. Demolition outside of these hours may be permitted at the Department's discretion provided that the Design-Builder submits a noise mitigation plan to the Department's Project Manager for review and acceptance. The plan shall ensure that demolition work is performed in accordance with the OCMC permit noise restrictions and all city codes and requirements. Failure to adhere to the noise mitigation plan may result in the suspension of demolition activities outside the hours of 7:00AM to 10:00PM.

The demolition of the existing viaduct structure, ramps and pedestrian bridge shall include all existing superstructure elements and all substructure elements as per NYSDOT Standards and BD Sheets and/or in accordance with environmental permitting. Unless noted otherwise in the Directive Plans, remove existing substructures as follows:

1) Completely remove the portion of the existing substructure within a lateral limit of 3 feet of the new substructure.
2) Remove the portion of the existing substructure that is outside of this lateral limit as follows:
    a. Existing substructure located under roadway or pedestrian facility shall be removed to 4 feet below finished grade.
    b. Existing substructure at all other locations shall be removed to 4 foot below finished grade.

The Design-Builder's attention is directed to the fact that both the viaduct superstructure and Ramp N superstructure are supported by a series of multi-column bents. The southernmost pier column at each Ramp N pier and the southernmost pier column of the viaduct from Piers 133 to 144 are founded on a combined footing (pile cap) that also supports the retaining wall along the Amtrak ROW. The Design-Builder shall perform the necessary analysis of the combined footings

SECTION 15 LANDSCAPE ARCHITECTURE

15.1 SCOPE

The Design-Builder shall perform the Landscape Architecture activities as described in this Section 15. The Work includes vegetation (tree) removals, vegetation (tree) protection and monitoring, soil remediation, and the development and implementation of a Landscape Development Plan (LDP). The Design-Builder shall be responsible for care of planting in accordance with NYSDOT Standard Specification §611-3.05 *Post-Planting Care*~~*Care of Planting*~~, and shall remain responsible for the maintenance and monitoring of all areas landscaped and planted by the Design-Builder until Final Acceptance. Post planting care and replacement plantings shall be as per the requirements of Special Specification 611.19010024 through 611.19070024, Post Planting Care with Replacement (Major Deciduous Trees, Minor Deciduous Trees, Coniferous Trees, Deciduous Shrubs, Evergreen Shrubs, Vines, Groundcovers, and Herbaceous Plants) for a period of one year.

Work on or near trees in city-owned rights of way are subject to permitting by Parks. As the project included work on property owned by New York City, the scope of work also includes all activities required to apply for both a NYC Parks Construction Permit (Design-Builder must obtain for design and access approval/authorization), and a NYC Parks Forestry Permit, (Design-Builder must procure prior to commencement of construction/landscape activities). See https://www.nycgovparks.org/services/forestry/tree-work-permit. In addition, the Design Builder shall incorporate a minimum 30-day NYC Parks review period into their schedule.

15.1.1 Proposed Planting

The Design-Builder's scope shall include plantings as shown in Part 6 – Directive Drawings.

15.2 STANDARDS

The Design-Builder shall perform site work in accordance with the Contract Requirements and the applicable Standards, Design Codes and Manuals cited in Section 1.6, unless otherwise stipulated in this Project Requirement or otherwise applicable to the Project.

15.3 GENERAL LANDSCAPE DEVELOPMENT

15.3.1 Existing Vegetation

Existing vegetation removal and disturbance should be minimized to the cut/fill limits and any removals, whether within the cut/fill limits or beyond those areas, shall be replaced in kind with native species appropriate for USDA NY Plant Hardiness Planting Zone 7a, as described in Section 15.3.2. Existing trees within the limits of existing sidewalk removal and replacement shall be protected with temporary plastic barrier fence. Existing trees within the medians of westbound Bruckner Boulevard lanes that must be removed, shall be replaced in accordance with the requirements of Section 15.3.2.

~~The Department has performed a site tree inventory which will be located in Part 7 – Engineering Data.~~ Prior to the removal of any trees or shrubs, an inventory of existing trees and shrubs shall be prepared by the Design-Builder and a copy provided to the CQAE. The inventory shall include major deciduous trees over 6 inches in diameter at breast height (DBH), coniferous trees over 6 feet in height, and deciduous or evergreen shrubs between 3 feet and 6 feet in height. The inventory shall include the size, location and species of each tree or shrub. Only living trees and

The Design-Builder shall design and construct new traffic and pedestrian crossing signals and modify the above specified existing signals with the latest current NYCDOT standard of traffic signal pole and cable supports, and also the latest standard for the pushbutton control systems with count-down timers at the pedestrian safety walks. Pedestrian push button control systems shall be Accessible Pedestrian Signals (APS) per TSMI 15-01 at all intersections. New LED Vehicle, Bicycle, Pedestrian, and Pedestrian Countdown Signals, where appropriate, shall be installed at all intersections. It is required that all new or modified signals with pedestrian signals are fully replaced (includes all poles, foundations, conduit and signal equipment are replaced with new equipment), APS should be designed and implemented for all crosswalks at the subject intersection.

All local street traffic signalization shall be developed as per the NYCDOT standards for traffic signal and intersection design. Traffic rules can be downloaded from NYCDOT website at:

http://www.nyc.gov/html/dot/downloads/pdf/trafrule.pdf.

Traffic signal specifications are available at http://www.nyc.gov/html/dot/downloads/pdf/nycdottraffic-signal-specifications.pdf. Standard drawings are available at http://www.nyc.gov/html/dot/downloads/pdf/nycdot-trafficsignal-standard-drawings.pdf.

The Design Builder shall coordinate with NYC agencies and prepare traffic signal plans for submission to NYCDOT Traffic Signals at least four weeks prior to RFC submission in the appropriate format per the NYCDOT policies. Upon approval (by NYCDOT) of traffic signal and intersection design, the Design-Builder shall incorporate and provide Traffic signal and intersection design drawings per the NYSDOT policies and most current CADD Standards. Preliminary traffic signal plans in NYCDOT format have been made available in Reference Documents~~provided in Part 7 – Engineering Data of the RFP~~.

The Design-Builder shall coordinate all work with Mario Castro, supervisor of Bronx Electrical Inspection. Mr. Castro must be contacted at least 48 hours prior to any traffic signal or street lighting work at 212-839-3290 In addition, the Design-Builder or his duly authorized representative shall email the following NYCDOT traffic signal personnel before 7am on the days of the work:

ksoutherland@dot.nyc.gov mcastro@dot.nyc.gov

eanyanwu@dot.nyc.gov hnguyen@dot.nyc.gov

To coordinate the removal of Speed Zone Cameras, contact Vincent Susi at (212) 839-3192.

Four weeks prior to beginning any construction work on traffic signals associated with the project, the Design-Builder shall notify the regional traffic signal section to perform an inspection of the existing traffic signal equipment. After the inspection, the Design-Builder shall submit to NYC Traffic and Signals a written notification of the date they will assume responsibility for traffic signal maintenance. No construction work shall proceed until traffic signal maintenance is assumed by the Design-Builder. The existing traffic signal shall be maintained by the Design-Builder under the requirements of Section 619 of the Standard Specifications, except for the controller, programming, and timing which shall be maintained by NYC Traffic and Signals.

The Design-Builder shall be responsible for maintaining the existing traffic signal equipment including underground conduit and cable and the safety of traffic for the duration of this project. All signals must remain operational during construction. This includes preparing and submitting

SECTION 17 LIGHTING

17.1 SCOPE

The Design-Builder shall conduct all Work necessary to provide all required lighting components required for the Project. This includes design as per NYCDOT Street Lighting latest standards and specifications, fabrication and construction of all related permanent and temporary roadway lighting of the bridge, roadway, walkway, shared use path, etc. within the Project Limits.

New Expressway lighting shall be located along the outside shoulders of the roadway.

The Design-Builder shall remove all existing lighting system including light poles, foundations, conduits, cables, junction boxes and cabinets and replace with new lighting system, including all components, within the following project limits:

- Bruckner Expressway from Barretto Street to Whitlock Ave
- Bruckner Boulevard from Barretto Street to Whitlock Ave
- Shared-use path/bike lane from Barretto Street to Whitlock Ave
- Area under Bruckner viaduct east of Hunts Point Ave
- Bryant Avenue Pedestrian Bridge
- New Ramp SS
- New Ramp SN

The Design-Builder shall be responsible for submitting to NYCDOT Street Lighting Engineering all shop drawings and design plans needed for the scope of work. The review and approval process shall be in conformance with the Design-Builder's Quality Control Plan and latest NYCDOT Street Lighting standards and specifications.

17.2 STANDARDS

The Design-Builder shall perform the lighting work in accordance with the Contract Requirements and the applicable Standards, Design Codes and Manuals listed in Part 3 – Project Requirements, Section 1.6, or otherwise applicable to the Project, and NYCDOT Street Lighting Standard Drawings, Specifications, and Notes included in Reference Documents~~Part 7 – Engineering Data~~, and the following additional Standards:

17.2.1 Standards

A) ANSI/IES ANSI Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting, RP-8-18

B) ANSI/IES ANSI Approved Recommended Practice for Roadway Sign Lighting, RP-19-01

C) FAA Advisory Circular 70/7460-1L, Obstruction Marking and Lighting with Change 2

D) IES Recommended Lighting for Walkways and Class 1 Bikeways, DG-5-94

E) NFPA NFPA 70 – National Electrical Code (NEC)

F) NYSDOT Policy on Highway Lighting

For the duration of this contract, the Design-Builder shall be responsible for Department directed maintenance work related to the ITS System within the Project limits. Any Department directed maintenance work will be paid for under the Extra Work~~Force Account Item~~.

The Design-Builder shall be responsible for ensuring that the following requirements are met:

A) The existing ITS system shall remain operational during the Project. The Department has prepared an ITS Plan included in Part 6, RFP Plans. The ITS Plan identifies existing ITS facilities based on NYSDOT Contracts D258775 and D900047.

B) The Design-Builder shall confirm the existing ITS system components in the field including the location, size, function and condition of all ITS features within the Project Limits from pre- construction as-built plans and field investigations and prepare an ITS report describing how the ITS features shall remain operational throughout construction, up to the Final Acceptance and submitted to the Department. This plan and report are due to the Department's Project Manager within 120 days after Notice to Proceed.

C) For maintenance purposes, ITS pullboxes shall be located so that they can be reached from the underside of the bridge by ground based equipment. ITS conduit shall be located so that they are within the fascia beams or girders and not exposed to view in elevation. All new pull boxes and manholes shall be labeled with 'NYSDOT Fiber' or 'NYSDOT Electrical'.

D) All existing ITS elements outside the project limits will continue to be maintained by the Department. Access to these features shall be retained for Department maintenance. Any such elements installed or damaged by the Design-Builder shall be repaired by the Design-Builder and shall be maintained by the Design-Builder until Final Acceptance and any warranty period;

E) The Design-Builder shall be responsible for the design, installation and maintenance services for the duration of the Project for all new ITS elements included in the Project. The Design-Builder shall be responsible for identifying all items necessary to install and operate all required ITS elements;

F) The Design-Builder shall coordinate with the Department to ensure the availability and use by the Design-Builder of the latest version of the Department's ITS equipment and system specifications.

G) The Design-Builder shall provide the Department access to the construction site for maintenance by the Department of the existing ITS facilities.

H) The Design-Builder shall install all necessary ITS temporary components and shall remove the old ITS components.

I) All existing and proposed ITS conduits require a minimum cover of 30". In locations this cannot be maintained, a steel plate shall be installed on top of the conduit.

SECTION 19 WORK ZONE TRAFFIC CONTROL AND ACCESS

19.1 SCOPE

The Design-Builder shall be responsible for the planning and provision of Work Zone Traffic Control (WZTC), required to perform the Project Work until Project Completion. This Project Requirement applies to any roads, ramps, cross roads, local streets, maintenance roads, driveways, sidewalks, bike lanes, and active paths within and/or affected by the Project.

The Design-Builder shall provide WZTC for the safe and efficient movement of people, goods, and services through the Project area(s) while maintaining access and minimizing negative impacts to residents, commuters, businesses, and NYSDOT maintenance operations.

Note that, as used in this section, "Work Zone Traffic Control plan" or "WZTC plan" is the equivalent of "Maintenance and Protection of Traffic plan" or "MPT plan" as described in Chapter 16 of the Highway Design Manual (HDM).

The Design-Builder shall develop Work Zone Traffic Control Plans for all long-term and temporary ~~(soft)~~ closures per Contract requirements and shall furnish, erect, and maintain barricades, warning signs, flaggers, and pilot cars in accordance with: the National Manual on Uniform Traffic Control Devices for Streets and Highways and the New York State Supplement 17 NYCRR Chapter V (collectively, MUTCD); the traffic control plan(s), as subject to the consultation and written comment of the Department's Project Manager; and the requirements of the Contract Documents. Flaggers shall be provided with equipment and training pursuant to requirements of the MUTCD. The equipment used by the flaggers shall be kept clean and in good repair by the Design-Builder at the Design-Builder's expense. The Design-Builder shall take all steps necessary to either keep the existing roadway open with a minimum of inconvenience to the traveling public or provide an approved alternate route.

When requested by the Design-Builder and approved by the Department's Project Manager, or when directed by the Department's Project Manager, Sections of the Project may be opened to traffic prior to completion of the entire Contract. Such opening shall not constitute Final Acceptance of the Work or any part thereof, or a waiver of any provisions of the Contract.

When a Section is opened in accordance with the Design-Builder's Work Zone Traffic Control Plan and/or as a result of the Design-Builder's request, the Design-Builder shall remain liable until Project Completion of the entire Project, and damage to the highway occurring before that time shall be repaired by the Design-Builder at the Design-Builder's expense, including the removal of earth or rock slides.

The Design-Builder's equipment shall enter and leave the traveled way only in the direction of public traffic. All movements on or across the traveled way shall be performed in a manner that will not endanger the traveling public.

The Design-Builder shall maintain the pavement surface of the lanes open to traffic adjacent to the Work zone within the limits of the Project traffic control.

Refer to Part 2, § DB 105-22 for information regarding the respective responsibilities of the Department and the Design-Builder for maintenance of sections of roadway open to the traveling public.

If the Design-Builder fails to furnish warning devices, take protective measures as above provided, or complete shoulder work, drainage structures, or other features of the Work, the Department's Project Manager, or Department's Construction Quality Assurance Engineer, at his or her discretion, will notify the Design-Builder in writing of the defects along with a reasonable period of time in which the Work must be corrected or completed. If the Design-Builder fails to make a reasonable effort, in the sole opinion of the Department's Project Manager, toward correction in this period of time, the Department's Project Manager may then take such steps as the Department's Project Manager deems necessary to correct the defects, or the Department's Project Manager may terminate the Contract for default under Part 2, DB 103-06, Article 11.

The Design-Builder shall be liable and agrees to pay the Department for all costs and expenses incurred by the Department in correcting the defect(s).

19.2 STANDARDS

The Design-Builder shall perform the work zone traffic control activities in accordance with the Contract Requirements and the applicable Standards, Design Codes and Manuals listed in Section 1.6, unless otherwise stipulated in this Project Requirements, or otherwise applicable to the Project.

19.3 REQUIREMENTS

19.3.1 General Requirements

Work Zone Traffic Control shall be performed in accordance with this Part 3, Section 19. Work Zone Traffic Control Notes provided in Part 6 – Directive Plans, and the New York City Department of Transportation Bureau of Permit Management and Construction Control Work Permit is included in Part 7.

Traffic enforcement agents shall be provided associated with the anticipated detour route and other operations as directed by the Department's Project Manager and consistent with Special Specification 619.22970011.

19.3.2 Work Zone Traffic Control Plan

The Design-Builder shall prepare and submit WZTC Plans for managing traffic operations and controlling access until Project Completion. WZTC Plans must be submitted in advance of any work that restricts vehicular and pedestrian traffic and shall include durations and traffic pattern changes that will exceed 2 hours in any 24-hour period. This applies to both long term and temporary ~~(soft)~~ closures. The Department's Project Manager should be informed of any planned lane closures two weeks in advance.

The WZTC Plan shall be submitted to the Department's Design Quality Assurance Engineer and Construction Quality Assurance Engineer a minimum of two weeks prior to initiation of any Work requiring a lane closure or the implementation of any change in traffic patterns.

The WZTC Plan shall include:

A) Contingency plans for reasonable unforeseen interruptions;

B) Duration of each WZTC stage, including duration of lane closure(s), if any;

C) Provisions for maintaining pedestrian traffic through the Project area at all times at all locations where pedestrian access through the Project area currently exists.

SECTION 21 DRAINAGE AND STORMWATER

21.1 SCOPE

The Design-Builder shall design and construct a storm water drainage system in accordance with the NYCDEP & NYSDOT design specifications. The proposed storm drain systems shall be designed to accommodate the required design flood frequency based on the Highway Functional Class of each facility per Chapter 8 of the NYSDOT HDM. The drainage surface features at-grade within the Boulevard and local streets (e.g. frame and grate, manhole covers) and pipe bedding construction shall conform with the NYCDEP standard details, design requirements and specifications:
https://www1.nyc.gov/site/ddc/resources/publications.page

The Expressway and Ramps SS and SN drainage design and construction shall conform with the following:

1. NYSDOT Special Specifications for a closed drainage system, located in Part 8.
2. For at-grade drainage, provide reinforced concrete pipe per NYSDOT Specifications. Provide a concrete cradle in accordance with NYCDEP requirements unless site and soil conditions necessitate concrete encasement or piles.
3. Stormwater management practices (SMPs) shall be designed and constructed to conform with the NYSDEC, NYSDOT, NYCDEP~~, the NYC Stormwater Manual~~ and manufacturer requirements and as outlined in the project SWPPP. SMP designs shall be coordinated with Contracts D900047 & D900051.

The Design-Builder shall conduct a pre-construction video inspection on existing NYCDEP and NYSDOT underground drainage facilities that are to remain within the limits of the project and a post-construction video inspection of the functioning underground drainage facilities after all drainage work, paving, and permanent construction work is completed. The inspections shall include all drainage facilities up to the nearest downstream manhole beyond the project limits. Prior to pre- and post-construction video inspections, the Design-Builder shall clean all new and existing drainage facilities (scuppers, storm drains, catch basins) to be inspected. The Design-Builder shall follow NYCDEP Sewer Standard Specifications Section 53.11 TELEVISION INSPECTION AND DIGITAL AUDIO-VISUAL RECORDING OF SEWERS. Extra care shall be taken during construction to protect the integrity of NYCDEP's existing sewer system inclusive of manholes, catch basins, sewers and system connections. Damage to the existing sewer systems within the duration of the contract shall be repaired/replaced to the satisfaction of NYSDOT's Project Manager at no additional cost to NYSDOT.

Where drainage patterns will or must be changed from existing patterns, the Design-Builder shall be responsible for securing all necessary permits prior to construction of any drainage facilities.

SECTION 24 SECURITY

24.1 REQUIREMENTS

The Design-Builder shall be responsible for the security of the Site and the Work from the date the Site is released to the Design-Builder until Project Completion. This shall include the protection of all workers, offices, workshops, equipment, material, and the Work from damage by vandalism, flood, storm, fire, theft, or other intentional acts. The foregoing shall not be construed to relieve the Design-Builder of responsibility for Work not yet completed as of the date of Project Completion.

The Site shall be adequately protected at all times to prevent unauthorized access onto the Site, particularly to areas of high safety risk. This protection shall include security fencing at areas of high safety risk to the public as well as areas with high risk of vandalism and other areas where necessary for the Design-Builder to fulfill obligations under the Contract. All necessary access for the public through the Site shall be adequately protected. The Design-Builder shall ensure that all of the Design-Builder's vehicles and vessels and any Subcontractor's vehicles and vessels that enter the Site are identifiable by a clearly visible plaque which includes the company's name, Design-Builder's logo and a unique serial number.

The Design-Builder shall provide adequate lighting and guarding at main security areas, Work areas, and storage yards.

The Design-Builder shall establish and maintain a system and people to control and guide visitors to and around the Site.

The Design-Builder shall designate a safe parking area(s) for workers to park private vehicles near the Project Site. The Design-Builder's personnel may park within the right of way or on any public roads or streets if approved by the Department's Project Manager.

24.2 SITE SECURITY PLAN

The Design-Builder shall prepare a Site Security Plan within 60 days of NTP, describing the Design-Builder's procedures for securing the Site. The Site Security Plan shall include the security requirements described in Section 24~~2~~.1. The Design-Builder shall review and update the Site Security Plan on a regular basis, and provide copies of any changes to the Department's Project Manager.

24.3 REPORTS

The Design-Builder shall submit a Security Report, reporting any security-related incident, with the monthly progress report (DB §108-01 (E)).

- Permanent lighting system meeting the illumination requirements in Part 3 Section 17 for shared use path (pedestrian sidewalk/bike lane).

The existing bicycle path between Longwood Avenue and Hunts Point Avenue shall be maintained until the permanent bicycle path has been completed and accepted.

26.1 PEDESTRIAN AND SHARED USE PATHS

As shown in Part 6 - Directive Plans, medians and sidewalks with pedestrian and shared use paths shall be re-graded and a 4" thick layer of concrete sidewalk over 6" thick layer of subbase course shall be placed.

26.2 BIKE PATHS

As shown in Part 6 – Directive Plans, bike paths shall be overlayed with green color surface treatment in accordance with Item 601.04040011. Surface preparation shall be in accordance with Item 635.01030011. If bike paths are shown at roadway level, the pavement should be milled and resurfaced and then overlayed with green color surface treatment up to the limits shown on the roadway plans. Bike paths on medians and sidewalks shall be re-graded and a 4" thick layer of hot-mix asphalt shall be placed with green color surface treatment. Asphalt shall be 12.5 F1 HMA, 80 Series Compaction placed on 6" of subbase.

26.3 BIKE SHARING STATION

The existing bike sharing station located at Westbound Bruckner Boulevard and Bryant Avenue is to be removed. After construction is completed, a new bike share station will be installed by others near Hoe Avenue and 163rd Street median. The Design-Builder will need to coordinate with NYCDOT for the location and installation of this new bike share station.

SP-10. INSURANCE REQUIREMENTS

INSURANCE COVERAGE

General insurance requirements are specified in ~~Standard Specifications §~~DB107-06 – *Insurance*.

As new work locations and involved parties become known, the Contractor shall secure coverage for any new parties as necessary per ~~§~~DB107-06A.4. Proof of coverage for the new additional insured parties shall be provided to the Department.

Proof of the Contractor's Workers' Compensation insurance and Disability insurance is required to be provided with the contract agreement. Acceptable proof of all applicable insurances shall be provided before commencing work.

Required Insurances
The following insurances are required on all contracts:

- Workers' Compensation
- Commercial General Liability
- Umbrella or Excess Liability
- Disability
- Commercial Automobile
- Special Protective and Highway Liability

Additional Required Insurances
If the box is checked, it indicates that it is a known additional required insurance:

☒ Professional Liability Insurance

☐ Marine Protection and Indemnity Insurance

Known to be required due to contract work associated with:

- ☐ Expected work from watercraft on navigable waters at a known location
- ☐ A rescue boat/skiff is required (e.g., there will be contract work over water ≥ 5 feet deep, contract work over swift moving water ≥ 2 feet deep, or other situations described in §107-05I – *Working Over or Near Water*)

☒ Railroad Protective Liability Insurance

A foreseeable risk has been identified for contract work to potentially negatively impact the safety of railroad movements and/or cargo at a known work location.

Railroad Entity to be Insured: AMTRAK, NYCT, CSXT
Policy Single Limit $5,000,000 / Aggregate Limit $10,000,000

☒ Pollution Liability Insurance

Policy Single Limit $1,000,000 / Aggregate Limit $1,000,000

☐ Unmanned Aircraft Systems Liability Insurance

There is required contract work involving unmanned aircraft.

Minimum Required Policy Limit: $

☒ Builders' Risk Policy

The Department has determined that certain contract work is required to be insured under a Builders' Risk policy.

Minimum Required Policy Limit: $100,000,000
Structure to be Insured: All permanent and temporary structures being constructed or rehabilitated in this Contract

LIST OF ADDITIONAL INSURED PARTIES

In accordance with ~~Standard Specifications §~~DB107-06A.4 applicable insurance policies shall be endorsed to provide coverage to:

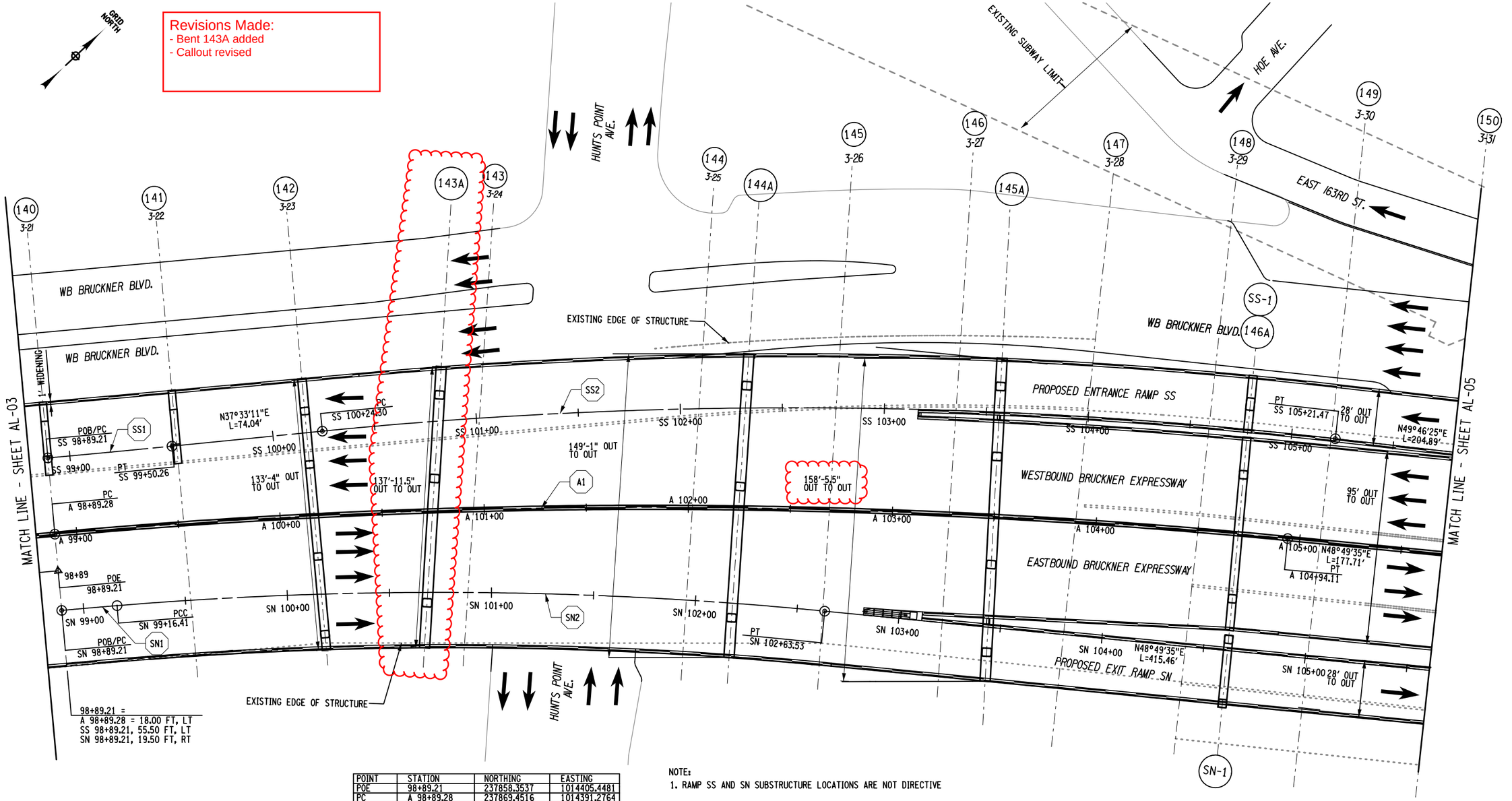
- The State of New York / New York State Department of Transportation
- Any municipality in which the work is being performed
- Any public benefit corporation, railroad, or public utility whose property or facilities are affected by the work
- Any consultants working for or on the project
- Agents or employees of the above listed parties

As any new locations of work are defined or added to the Contract, the Contractor shall extend coverage to any new parties that warrant coverage as per ~~§~~DB107-06A.4. Proof of coverage for the new additional insured parties shall be provided to the Department.

Coverage shall be extended to the following known additional insured parties:

- The State of New York/New York State Department of Transportation
- Bronx County
- City of New York
- National Passenger Railroad Corporation (Amtrak)
- CSX Transportation, Inc. (CSXT)
- Metropolitan Transportation Authority (MTA) – New York City Transit Authority (NYCTA), an MTA Agency
- Con Edison
- ECS/Verizon
- New York City Department of Environmental Protection
- FDNY
- AT&T
- Cablevision
- NYC Police Department

Revisions Made:
- Bent 143A added
- Callout revised



POINT	STATION	NORTHING	EASTING
POE	98+89.21	237858.3537	1014405.4481
PC	A 98+89.28	237869.4516	1014391.2764
POB/PC	SS 98+89.21	237892.5630	1014361.7449
POB/PC	SN 98+89.21	237846.3343	1014420.8034

NOTE:
1. RAMP SS AND SN SUBSTRUCTURE LOCATIONS ARE NOT DIRECTIVE

LEGEND:
- (43) - NEW BENT NUMBER
- 2-I - OLD BENT NUMBER
- (A1) - EXISTING CURVE NUMBER
- (A1) - PROPOSED CURVE NUMBER
- EXISTING ALIGNMENT
- PROPOSED ALIGNMENT
- APPROXIMATE LOCATION OF EXISTING IRT SUBWAY

25 0 25 50 75 100'
1"=50'

AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT
CONTRACT 3
FROM BARRETTO STREET TO WHITLOCK AVE. AND SHERIDAN BLVD.
COUNTY: BRONX REGION: 11

PIN X731.65

BRIDGES

CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

DIRECTIVE PLANS
ALIGNMENT PLAN 4

CONTRACT NUMBER
D900055

DRAWING NO. AL-04
SHEET NO.

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

PROJECT MANAGER
CHECK
DRAFTING
CHECK
DESIGN
JOB MANAGER
DESIGN SUPERVISOR

FILE NAME = pw:/../../../../X731.65_Hunts Point Truck Access - Contract 3/CAD/01 AECOM/Civil/X73165_CPH_ALP_104-AECOM.dgn
DATE/TIME = Thursday, June 30, 2022 12:37:27 PM
USER = seizerd

Revisions Made:
- Bent 143A added

PROJECT MANAGER
CHECK
DRAFTING
CHECK
DESIGN
JOB MANAGER
DESIGN SUPERVISOR

FILE NAME = pw:/../../../../X731.65_Hunts Point Truck Access - Contract 3/CAD/01 AECOM/Civil/X73165_CPH_MST_004-AECOM.dgn
DATE/TIME = Thursday, June 30, 2022 11:41:27 AM
USER = Alan.Huang

BRUCKNER EXPRESSWAY

FROM		TO		OUT-TO-OUT WIDTH			TOTAL WIDENING	EB WIDENING	WB WIDENING	REMARKS
BENT	STATION	BENT	STATION	EXISTING		PROPOSED				
				RAMP	STRUCTURE					
133	93+81.47			N/A	113'-4"	130'	16'-8"		16'-8"	BRIDGE WIDTH MEASURED ALONG PIER LINE
134	94+64.34			N/A	118'-2"	130'	11'-10"		11'-10"	BRIDGE WIDTH MEASURED ALONG PIER LINE
135	95+51.34			N/A	123'-9"	130'	6'-3"		6'-3"	BRIDGE WIDTH MEASURED ALONG PIER LINE
136	96+34.21	140	98+89.21	34'-0"	94'-0"	130'	1'-0"		1'-0"	BRIDGE WIDTH MEASURED ALONG PIER LINE
141	A 99+52.68			34'-0"	94'-0"	130'-8"	1'-8"	8"	1'-0"	BRIDGE WIDTH MEASURED ALONG PIER LINE
142	A 100+16.71			34'-0"	94'-0"	133'-4"	4'-4"	3'-4"	1'-0"	BRIDGE WIDTH MEASURED ALONG PIER LINE
143A	A 100+74.73					137'-11.5"				BRIDGE WIDTH MEASURED ALONG PIER LINE
144A	A 102+24.73					149'-1"				BRIDGE WIDTH MEASURED ALONG PIER LINE
145A	A 103+49.73			N/A		158'-5.5"				BRIDGE WIDTH MEASURED ALONG PIER LINE
146A	A 104+69.73					95'				BRIDGE WIDTH MEASURED ALONG PIER LINE
ML ABUT	A 105+89.73					95'				BRIDGE WIDTH MEASURED ALONG PIER LINE

AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT
CONTRACT 3
FROM BARRETTO STREET TO WHITLOCK AVE. AND SHERIDAN BLVD.

COUNTY: BRONX REGION: 11

PIN X731.65

BRIDGES

CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

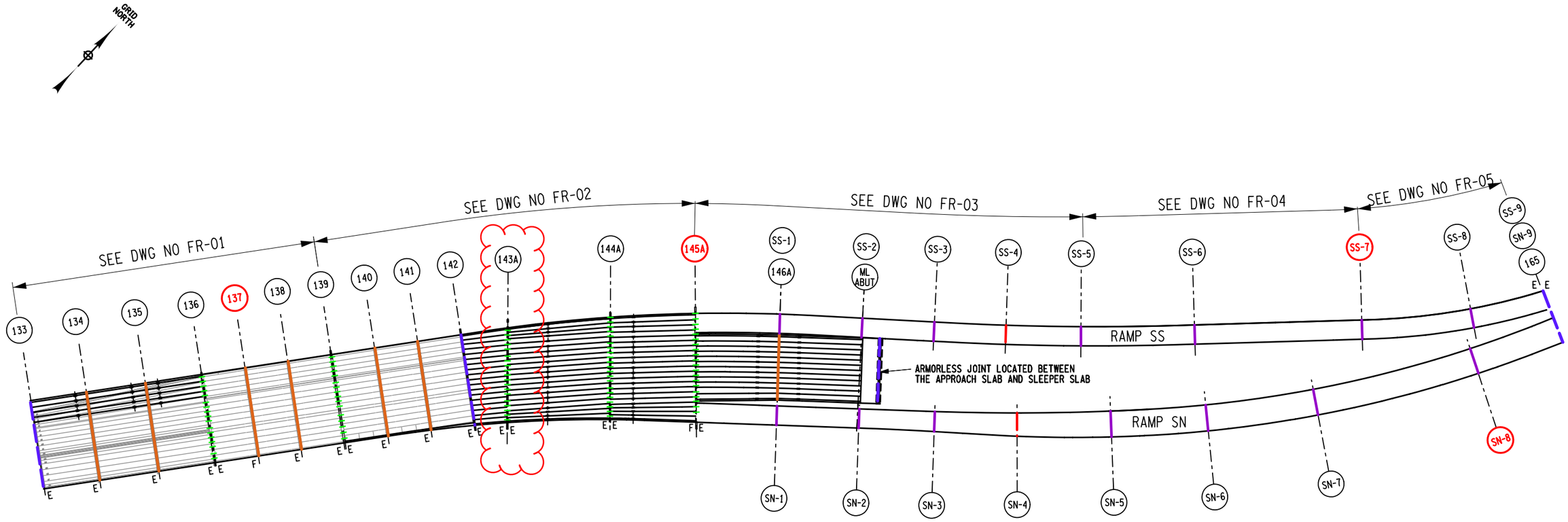
DIRECTIVE PLANS
MISCELLANEOUS TABLES
SHEET 4

CONTRACT NUMBER
D900055

DRAWING NO. MST-4

SHEET NO.

NEW YORK STATE OF OPPORTUNITY. Department of Transportation



DECK JOINT AND LINK SLAB LAYOUT - KEY PLAN
NOT TO SCALE

NOTES:

1. MODIFICATION TO THE ENDS OF THE STEEL GIRDERS MAY BE REQUIRED TO ALLOW FOR INSTALLATION OF MULTI-CELL MODULAR EXPANSION JOINTS.
2. END DIAPHRAGMS UNDER THE PROPOSED MULTI-CELL MODULAR EXPANSION JOINTS TO BE REPLACED SHALL ACCOMMODATE INSTALLATION OF THE MULTI-CELL MODULAR EXPANSION JOINTS.
3. FIXED BERAING LOCATIONS SHOWN ARE NOT A DIRECTIVE REQUIREMENT.
4. THE JOINT LOCATIONS SHOWN FOR RAMPS SS AND SN ARE INDICATIVE. A MAXIMUM OF ONE JOINT IS PERMITTED PER RAMP IN ADDITION TO PIER 165.
5. THE CONTINUOUS SUPERSTRUCTURES SHOWN FOR RAMPS SS AND SN ARE INDICATIVE. IF SIMPLE SPANS ARE USED FOR THESE RAMPS THEY SHALL BE IN CONJUNCTION WITH LINK SLABS.

LEGEND:

- XXX — PIER NUMBER
- XXX — PIER NUMBER (FIXED BEARINGS)
- LINK SLAB
- MULTI-CELL MODULAR EXPANSION JOINT
- CONTINUOUS SUPERSTRUCTURE
- MULTI-CELL MODULAR EXPANSION JOINT (INDICATIVE)
- CONTINUOUS SUPERSTRUCTURE (INDICATIVE)
- PROPOSED FRAMING (INDICATIVE)
- *EXISTING FRAMING (TO REMAIN)*

AFFIX SEAL: ON:	ALTERED BY: ON:

List of Revisions for Addendum #6
- New Pier 143A

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT
CONTRACT 3
FROM BARRETTO STREET TO WHITLOCK AVE. AND SHERIDAN BLVD.
COUNTY: BRONX REGION: 11

PIN X731.65

BRIDGES

CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

DIRECTIVE PLANS
DECK JOINT AND LINK SLAB LAYOUT - KEY PLAN

CONTRACT NUMBER
D900055

DRAWING NO. LSL-01
SHEET NO.

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

PROJECT MANAGER
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DRAFTING
JOB MANAGER
DESIGN
CHECK
DESIGN SUPERVISOR

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DATE/TIME = Wednesday, June 29, 2022 04:53:48 PM
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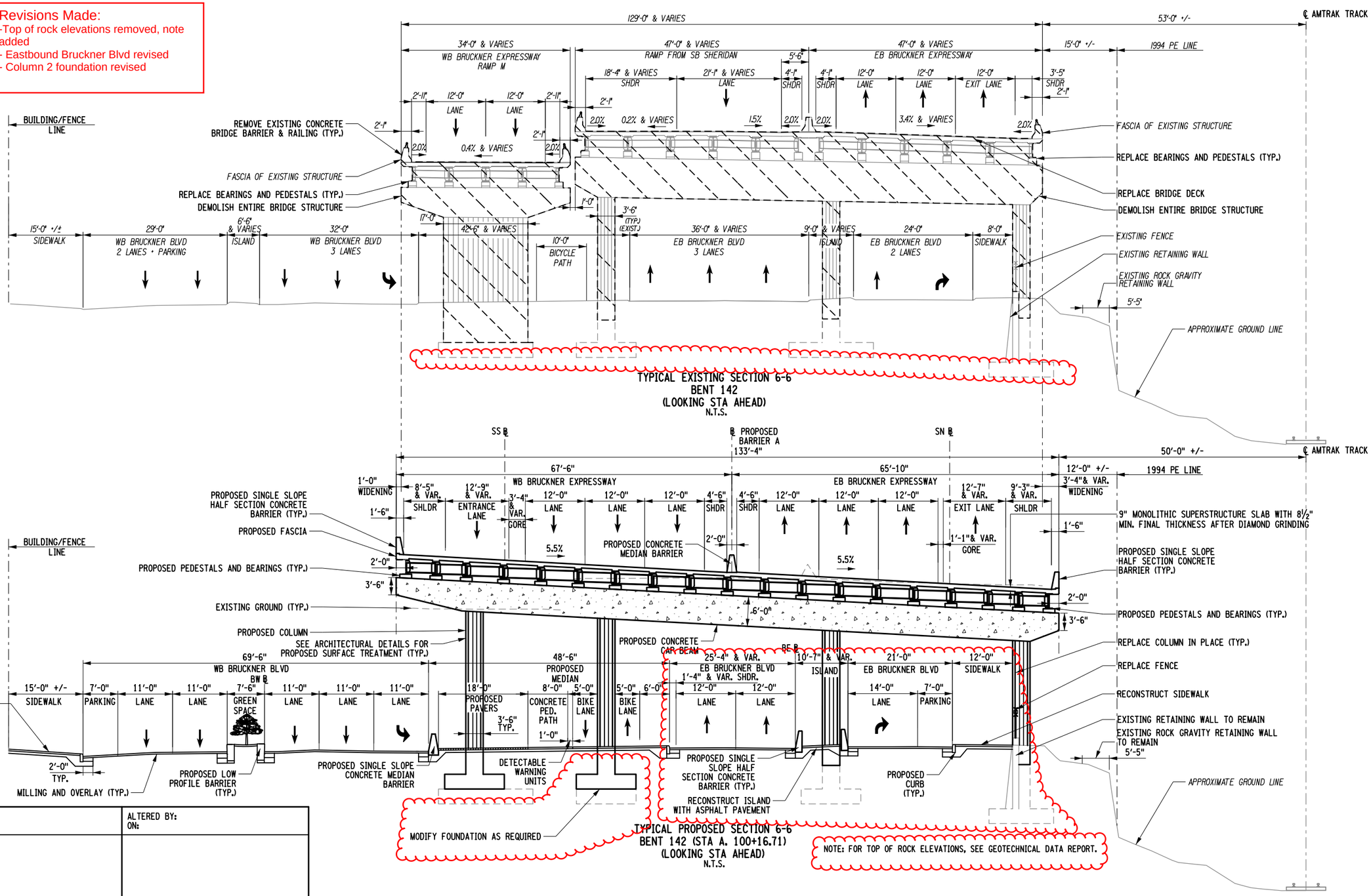
Revisions Made:
-Top of rock elevations removed, note added
- Eastbound Bruckner Blvd revised
- Column 2 foundation revised



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT CONTRACT 3 FROM BARRETTO STREET TO WHITLOCK AVE. AND SHERIDAN BLVD. COUNTY: BRONX REGION: 11	PIN X731.65	BRIDGES	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED INDICATIVE PLANS TYPICAL SECTION 6-6	CONTRACT NUMBER D900055 DRAWING NO. TYP-06 SHEET NO.

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

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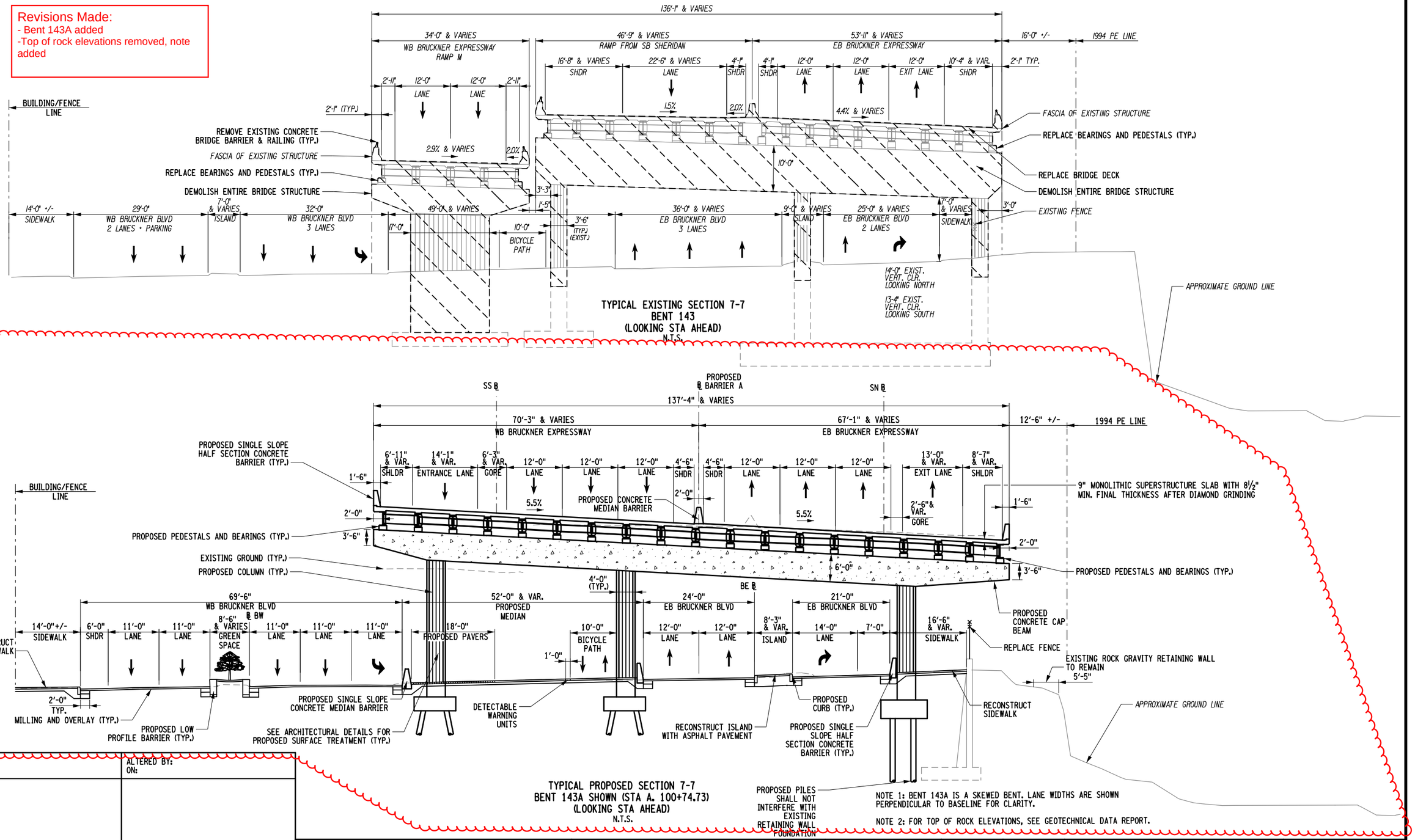
Revisions Made:
- Bent 143A added
-Top of rock elevations removed, note added



TYPICAL EXISTING SECTION 7-7
BENT 143
(LOOKING STA AHEAD)
N.T.S.

TYPICAL PROPOSED SECTION 7-7
BENT 143A SHOWN (STA A. 100+74.73)
(LOOKING STA AHEAD)
N.T.S.

NOTE 1: BENT 143A IS A SKEWED BENT. LANE WIDTHS ARE SHOWN PERPENDICULAR TO BASELINE FOR CLARITY.

NOTE 2: FOR TOP OF ROCK ELEVATIONS, SEE GEOTECHNICAL DATA REPORT.

AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT	PIN X731.65	BRIDGES	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED
CONTRACT 3				INDICATIVE PLANS TYPICAL SECTION 7-7
FROM BARRETTO STREET TO WHITLOCK AVE. AND SHERIDAN BLVD.				
COUNTY: BRONX REGION: 11				

CONTRACT NUMBER D900055
DRAWING NO. TYP-07
SHEET NO.

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

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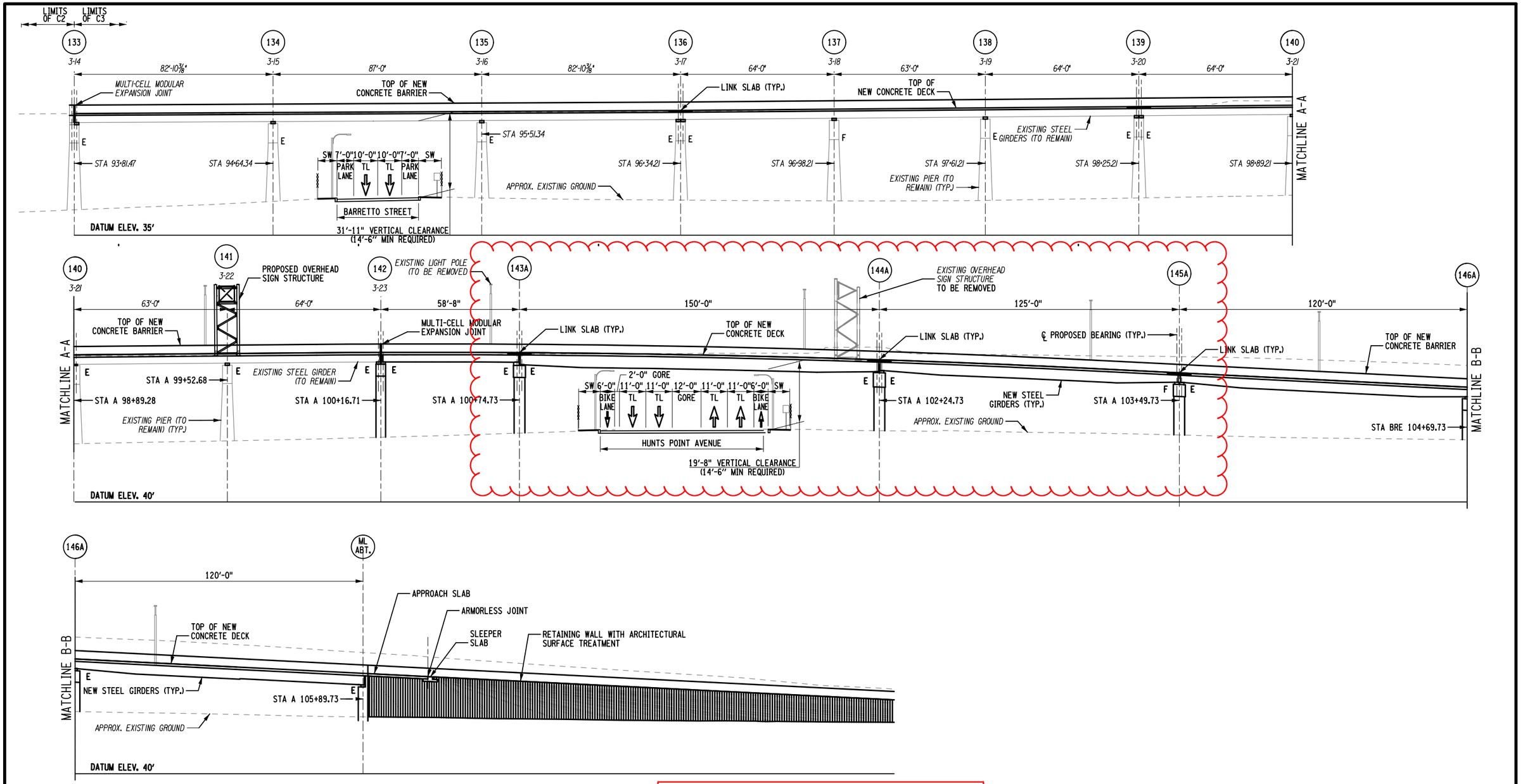

List of Revisions for Addendum #6
- New Pier 143A
- Increased pier and cap beam widths
- Increased depth of girders in Span 144
- Decreased vertical clearance in Span 144

REFERENCES:

1. FOR GENERAL PLANS, SEE DWG. NOS. GP-01 TO GP-10.
2. FOR PROPOSED PROFILES, SEE DWG NOS. PRO-01 TO PRO-10.
3. FOR EXPANSION JOINT AND LINK SLAB LAYOUT, SEE DWG. NO. LSL-01.
4. FOR ARCHITECTURAL SURFACE TREATMENT DETAILS, SEE DWG NOS. DET-01 TO DET-04.

AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT
CONTRACT 3
FROM BARRETTO STREET TO WHITLOCK AVE. AND SHERIDAN BLVD.
COUNTY: BRONX REGION: 11

PIN X731.65

BRIDGES

CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

INDICATIVE PLANS
PROPOSED ELEVATION
BRUCKNER EXPRESSWAY MAINLINE

CONTRACT NUMBER D900055

DRAWING NO. EL-01
SHEET NO.

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

PROJECT MANAGER N.BASTA
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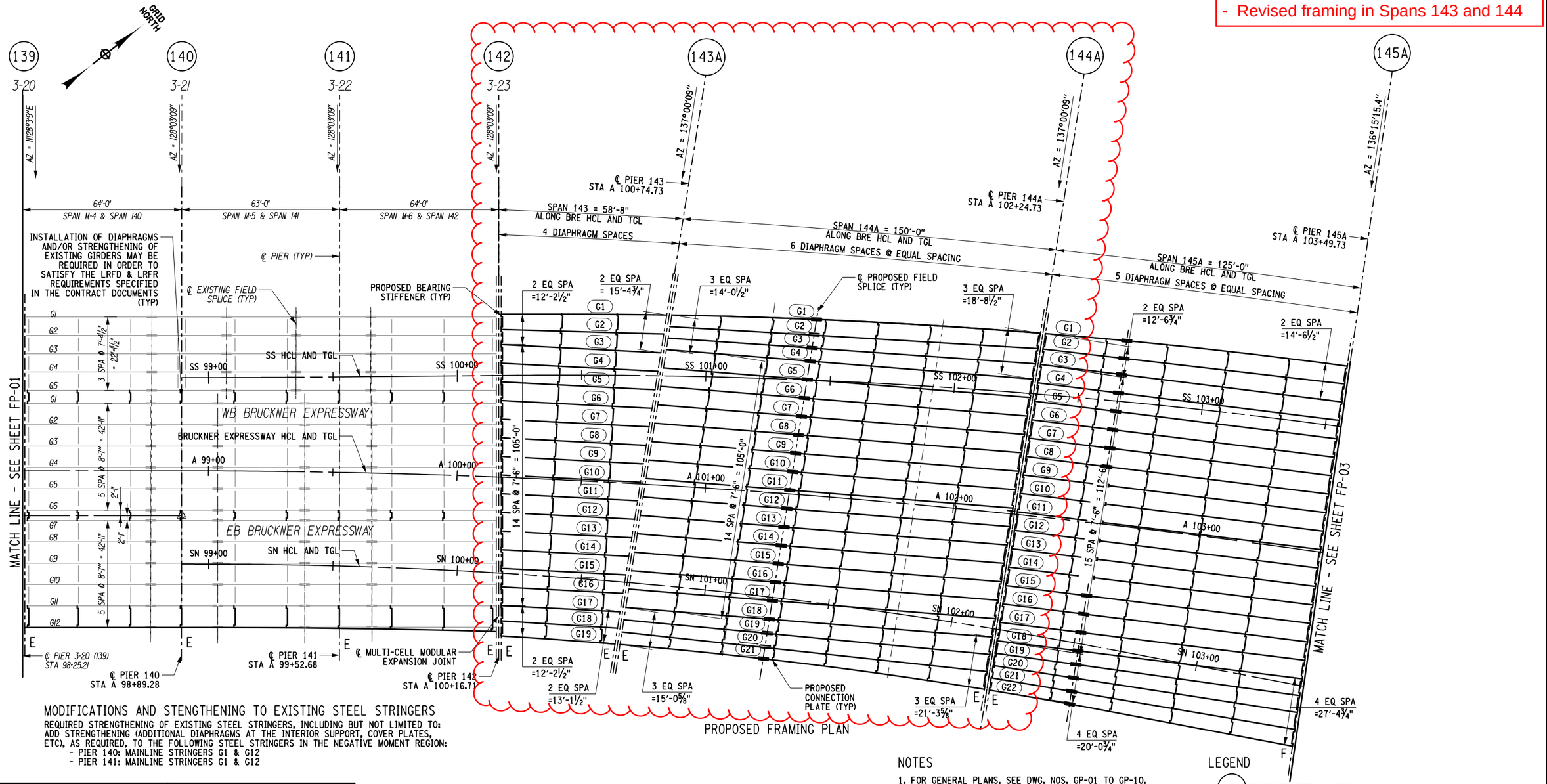
List of Revisions for Addendum #6
- New Pier 143A
- Revised framing in Spans 143 and 144



PROPOSED FRAMING PLAN

MODIFICATIONS AND STENGTHENING TO EXISTING STEEL STRINGERS

REQUIRED STRENGTHENING OF EXISTING STEEL STRINGERS, INCLUDING BUT NOT LIMITED TO: ADD STRENGTHENING (ADDITIONAL DIAPHRAGMS AT THE INTERIOR SUPPORT, COVER PLATES, ETC), AS REQUIRED, TO THE FOLLOWING STEEL STRINGERS IN THE NEGATIVE MOMENT REGION:
- PIER 140: MAINLINE STRINGERS G1 & G12
- PIER 141: MAINLINE STRINGERS G1 & G12

NOTES

1. FOR GENERAL PLANS, SEE DWG. NOS. GP-01 TO GP-10.
2. FOR PROPOSED ELEVATIONS, SEE DWG. NOS. EL-01 TO EL-03.
3. FOR TYPICAL SECTIONS, SEE DWG. NOS. TYP-01 TO TYP-16.
4. FOR STEEL REPAIR TABLES, SEE DWG. NO. SR-03.
5. FOR STEEL REPAIR DETAILS, SEE DWG. NO. SR-04.

LEGEND

(XXX) PROPOSED PIER NUMBER

X-XX EXISTING PIER NUMBER

PROPOSED STEEL FRAMING

EXISTING STEEL FRAMING (TO REMAIN)

20 0 20 40 60 80'

1"=40'

AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT
CONTRACT 3
FROM BARRETTO STREET TO WHITLOCK AVE. AND SHERIDAN BLVD.
COUNTY: BRONX REGION: 11

PIN X731.65 | BRIDGES | CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

INDICATIVE PLANS
PROPOSED FRAMING PLAN - 2

CONTRACT NUMBER D900055
DRAWING NO. FP-02
SHEET NO.

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

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JOB MANAGER
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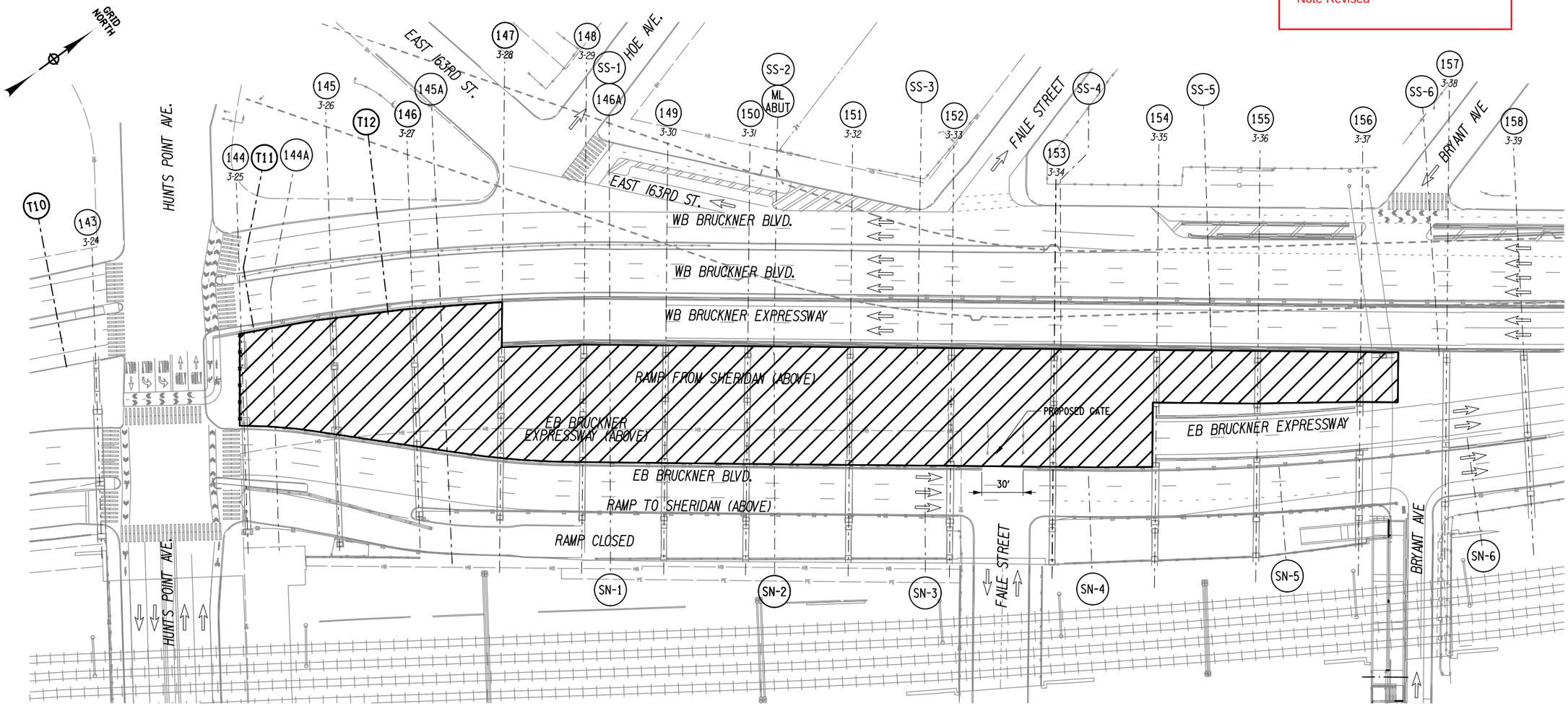
USER = ejarosch

ENGINEERING DATA

TABLE OF CONTENTS

Revisions Made:
- Note Revised



STAGING AREA 1

EXISTING PARKING LOT FACILITY
AREA: 65,000 SQ FT

NOTE:

1. PROPOSED STAGING AREA 1 WILL BE AVAIABLE AT THE START OF CONSTRUCTION

LEGEND:

(43) - NEW BENT NUMBER
2-1 - *OLD BENT NUMBER*
STAGING AREA

40' 0 40' 80' 120' 160'
1"=80'

AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

HUNTS POINT INTERSTATE ACCESS IMPROVEMENT PROJECT
CONTRACT 3
FROM BARRETTO STREET TO WHITLOCK AVE. AND SHERIDAN BLVD.
COUNTY: BRONX REGION: 11

PIN X731.65

BRIDGES

CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

STAGING AREA PLANS
AREA 1

CONTRACT NUMBER
D900055

DRAWING NO. STG-01
SHEET NO.

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USER = Lawrence.Ise

NEW YORK CITY DOT

Department of Transportation

Ydanis Rodriguez, Commissioner

New York State Dept. of Transportation
Region 11
47-40 21st Street
New York, NY 11101

Attn:
Tel: (718) 482-4801

HCP-PENDING
June 15, 2022

Re: PIN X731.65, Hunts Point Interstate Access Improvement Project, Contract 3

Borough of the Bronx

WORK PERMIT

Stipulations are hereby given to the New York State Dept. of Transportation and its duly authorized representative's **xxxxxxxxxx**, to enter upon and restrict the flow of traffic on the Bruckner Expressway, Bruckner Boulevard, Sheridan Boulevard, Edgewater Road and Bryant Avenue

1. This permit shall be in effect as of **xxxxxxxxx.**

2. **The Permittee may close lane(s) according to the following schedule:**

A. BRUCKNER EXPRESSWAY EB:

a. **From Tiffany Street to Hunts Point Ave, three (3) lanes configuration**
For Bridge reconstruction, deck replacement, rehabilitation, and widening construction:

1) Single Lane Closures during the following hours:
   a) 10:00PM to 5:00 AM, Monday night to Friday morning
   b) 10:00PM to 10:00 AM, Friday night to Saturday morning
   c) 10:00PM to 12:00 PM, Saturday night to Sunday afternoon
   d) 10:00PM to 5:00 AM, Sunday night to Monday morning

2) Two Lane Closures during the following hours:
   a) 1:00AM to 5:00AM, Tuesday morning to Friday morning
   b) 1:00AM to 6:00AM, Saturday morning
   c) 1:00AM to 7:00AM, Sunday morning
   d) 1:00AM to 5:00AM, Monday morning

3) Minimum lane width: 11' for multiple lanes, 12' for single lane cattle chutes

Office of Construction Mitigation and Coordination
Highways Division
NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street, 7th Floor, New York, NY 10041
T: 212- 839-9645 F: 212-839-8970
www.nyc.gov/dot

4) The exit ramp from EB Bruckner Expressway to Sheridan Boulevard shall be kept open at all times.

For removal and installation of overhead sign structures and panels:

1) Complete closure
   a) Complete closure is permitted for maximum duration of 15 minutes between the hours of 1:00AM to 5AM Monday to Saturday. A minimum of one (1) hour, or until the traffic queue is relieved, whichever period is shorter, is required between any two (2) such closures.

b. From Hunts Point Ave to Whittier Street, two (2) lanes configuration
For Bridge reconstruction, deck replacement, rehabilitation, and widening construction:

1) Single Lane Closures during the following hours:
   2) 12:01AM to 5:00 AM, Tuesday morning to Friday morning
   3) 12:01AM to 8:00 AM, Saturday morning
   4) 12:01AM to 10:00 AM, Sunday morning
   5) 12:01AM to 5:00 AM, Monday morning

6) Minimum lane width: 11' for multiple lanes, 12' for single lane cattle chutes

7) The exit ramp from EB Bruckner Expressway to Sheridan Boulevard shall be kept open at all times.

For removal and installation of overhead sign structures and panels:

1) Complete closure

   a) Complete closure is permitted for maximum duration of 15 minutes between the hours of 1:00AM to 5AM Monday to Saturday. A minimum of one (1) hour, or until the traffic queue is relieved, whichever period is shorter, is required between any two (2) such closures.

BRUCKNER EXPRESSWAY WB:

a. From Tiffany Street to Hunts Point Ave, three (3) lanes configuration
For Bridge reconstruction, deck replacement, rehabilitation, and widening construction:

1) Single Lane Closures during the following hours:
   a) 10:00PM to 5:00 AM, Monday night to Friday morning
   b) 10:00PM to 6:00 AM, Friday night to Saturday morning

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c) 10:00PM to 10:00 AM, Saturday night to Sunday morning
d) 10:00PM to 5:00 AM, Sunday night to Monday morning

2) Two Lane Closures during the following hours:
a) 12:01AM to 4:00AM, Monday morning to Friday morning
b) 12:01 AM to 5:00AM, Saturday morning
c) 1:00AM to 6:00AM, Sunday morning

3) Minimum lane width: 11' for multiple lanes, 12' for single lane cattle chutes

4) The entrance ramp from Sheridan Boulevard to WB Bruckner Expressway shall be kept open at all times.

For removal and installation of overhead sign structures and panels:

1) Complete closure
a) Complete closure is permitted for maximum duration of 15 minutes between the hours of 1:00AM to 5AM Monday to Saturday. A minimum of one (1) hour, or until the traffic queue is relieved, whichever period is shorter, is required between any two (2) such closures.

b. From Hunts Point Ave to Whittier Street, two (2) lanes configuration
For Bridge reconstruction, deck replacement, rehabilitation, and widening construction:

1) Single Lane Closures during the following hours:
a) 10:00PM to 5:00AM, Monday through Friday
b) 10:00PM to 6:00AM, Friday night to Saturday morning
c) 10:00PM to 9:00AM, Saturday night to Sunday morning
d) 10:00PM to 5:00AM, Sunday night to Monday morning

2) Minimum lane width: 11' for multiple lanes, 12' for single lane cattle chutes

3) The entrance ramp from Sheridan Boulevard to WB Bruckner Expressway shall be kept open at all times.

For removal and installation of overhead sign structures and panels:

2) Complete closure

b) Complete closure is permitted for maximum duration of 15 minutes between the hours of 1:00AM to 5AM Monday to Saturday. A minimum of one (1) hour, or until the traffic queue is relieved, whichever period is shorter, is required between any two (2) such closures.

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B. BRUCKNER BOULEVARD EB:

a. From Tiffany Street to Barretto Street, at the future configuration of three (3) through lanes on Mainline, one (1) through lane and single lane right turn lanes on Service Road
For painting of structural steel and for slope stabilization and roadside improvements:

1) Single Lane Closure on Mainline (two lanes open):
   a) Contiguously

2) Single Lane closure on Service Road (One shared lane open) during the following hours:
   a) 10:00PM to 5:00 AM, Monday night to Friday morning
   b) 10:00PM to 12:00 PM, Friday night to Saturday afternoon
   c) 10:00PM to 12:00 PM, Saturday night to Sunday afternoon
   d) 10:00PM to 5:00AM, Sunday night to Monday morning

b. From Barretto Street to Hunts Point Avenue, at the future configuration of two (2) through lanes on Mainline and single lane right turn lane on Service Road
For roadway reconstruction and bike path, and for painting of structural steel

1) Single Lane closure on Mainline (two lanes open to traffic during the following hours:
   a) 10:00PM to 5:00AM, Monday night to Friday morning
   b) 10:00PM to 10:00AM, Friday night to Saturday morning
   c) 10:00PM to 12:01PM, Saturday night to Sunday afternoon
   d) 9:00PM to 5:00AM, Sunday night to Monday morning
   e) Traffic alternate route detour shall be provided as shown in plans

2) Single lane closure on service road (right turn lane is maintained)
   a) Continuously
   b) Traffic alternate route detour shall be provided as shown in plans
   c) Maximum duration of 18 months is permitted

c. From Hunts Point Avenue to Faile Street, at the future configuration of two (2) through lanes
For demolition of existing structures, construction of Bruckner Expressway, construction of ramp SN and roadway construction:

1) Single Lane Closure (1 lane open and slip right turn lane to Faile Street):
   a) Continuously
   b) Traffic alternate route detour shall be provided as shown in plans
   c) Maximum duration of 18 months is permitted
2) Entrance ramp to Sheridan Boulevard is closed

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3) Provide traffic enforcement agents (TEAs) at Hunts Point Ave intersection during weekday peak hours

d. From Faile Street to Whittier Street, at the future configuration of two (2) through lanes

For demolition of existing structures, construction of Bruckner Expressway, construction of ramp SN and roadway construction:

1) Single Lane Closure (1 lane open):
   a) Continuously
   b) Maximum duration of 18 months is permitted
   c) Provide additional right lane from EB Bruckner Boulevard to Whittier Street
   d) Pedestrian access along existing sidewalk shall be maintained. During replacement of sidewalk, detour route for pedestrians shall be provided.
   e) Traffic alternate route detour shall be provided as shown in plans

2) Bryant Avenue is closed between EB Bruckner Boulevard and Garrison Avenue
   a) Maximum duration of 18 months is permitted
   b) Local businesses access is maintained at all times.
   c) Emergency vehicle access is maintained at all times.
   d) Access to Bryant Avenue Pedestrian Bridge is maintained open at all times.
   e) Traffic signal operation at Bryant Avenue and EB Bruckner Boulevard is suspended during construction.
   f)
3) Whittier Street to be converted to two-way street
   a) Maximum duration of 18 months is permitted
   b) Provide advance signing, in addition detour traffic along Garrison Ave to Whittier Street to EB Bruckner Boulevard.

4) Provide traffic enforcement agents (TEAs) at Faile Street and at Whittier Street intersection during weekday peak hours

C. BRUCKNER BOULEVARD WB:

a. From Tiffany Street to Barretto Street, at the future configuration of One (1) through lane and one left lane on Mainline and two (2) through lanes and parking lane on Service Road

For demolition of existing structures, construction of Bruckner Expressway, construction of ramp SS and roadway construction:

1) Single Lane Closure on Mainline (One left shared lane open):
   a) Continuously
   b) Maximum duration of 24 months is permitted

2) Single Lane Closure on Service Road (One lane open) during the following hours:
   a) 10:00PM to 5:00AM, Monday night to Friday morning

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b) 10:00PM to 7:00AM, Friday night to Saturday morning
c) 8:00PM to 11:00AM, Saturday night to Sunday morning
d) 8:00PM to 5:00AM, Sunday night to Monday morning
e) Maximum duration of 24 months is permitted

3) Minimum lane width: 10'-9" for multiple lanes, 12' for single lane cattle chutes

4) Parking lane shall be maintained. Except during pavement milling and overlay and sidewalk replacement. Access to private building and businesses shall be maintained at all times

5) Bike lane between Tiffany Street and Barreto Street shall be maintained.

6) Traffic enforcement agents (TEAs) shall be provided at Tiffany Street and Barretto Street intersections during morning and evening peak hours.

b. From Barretto Street to Hunts Point Avenue, at the future configuration of two (2) through lanes and one left lane on Mainline and two (2) through lanes and parking lane on Service Road

For demolition of existing structures, construction of Bruckner Expressway, construction of ramp SS and roadway construction:

1) Single Lane Closure on Mainline (One left shared lane open):
   a) Continuously
   b) Maximum duration of 24 months is permitted

2) Single Lane Closure on Service Road (One lane open) during the following hours:
   a) 10:00PM to 5:00AM, Monday night to Friday morning
   b) 10:00PM to 7:00AM, Friday night to Saturday morning
   c) 8:00PM to 11:00AM, Saturday night to Sunday morning
   d) 8:00PM to 5:00AM, Sunday night to Monday morning
   e) Maximum duration of 24 months is permitted

3) Minimum lane width: 10'-9" for multiple lanes, 12' for single lane cattle chutes

4) Parking lane shall be maintained. Except during pavement milling and overlay and sidewalk replacement. Access to private building and businesses shall be maintained at all times

5) Bike lane between Barreto Street and Hunts Point Avenue shall be maintained.

6) Traffic enforcement agents (TEAs) shall be provided at Hunts Point Avenue intersection during morning and evening peak hours.

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c. **From Hunts Point Avenue to Faile Street, at the future configuration of five (5) through lanes**
For demolition of existing structures, construction of Bruckner Expressway, construction of ramp SS and roadway construction:

1) Double Lanes Closure (Three lanes open):
   a) Continuously
   b) Maximum duration of 24 months is permitted

2) Additional Lane Closure (Two lanes open) during the following hours:
   a) 10:00PM to 5:00AM, Monday night to Friday morning
   b) 10:00PM to 7:00AM, Friday night to Saturday morning
   c) 8:00PM to 11:00AM, Saturday night to Sunday morning
   d) 8:00PM to 5:00AM, Sunday night to Monday morning
   e) Traffic alternate route detour shall be provided as shown in plans
   f) Maximum duration of 24 months is permitted

3) Minimum lane width: 11' for multiple lanes, 12' for single lane cattle chutes

4) Maintain access to Hunts Point Avenue subway and bus stops at all times.

5) Maintain right turn lanes to Hunts Point Avenue, Hoe Avenue and Faile Street.

6) Parking lane shall be maintained. Except during pavement milling and overlay and sidewalk replacement. Access to private building and businesses shall be maintained at all times

7) Bike lane between Hunts Point Avenue and Faile Street shall be maintained.

8) Traffic enforcement agents (TEAs) shall be provided at Faile Street and Hoe Avenue intersection during morning and evening peak hours.

d. **From Faile Street to Bryant Avenue, at the future configuration of four (4) through lanes**
For demolition of existing structures, construction of Bruckner Expressway, construction of ramp SS and roadway construction:

1) Double Lanes Closure (Two lanes open):
   a) Continuously
   b) Maximum duration of 24 months is permitted

2) Additional Lane Closure (One lane open) during the following hours:
   a) 11:00PM to 4:00AM, Monday night to Friday morning
   b) 12:01AM to 6:00AM, Saturday morning
   c) 12:01AM to 9:00AM Sunday morning
   d) 11:00PM to 4:00AM, Sunday night to Monday morning

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e) Traffic alternate route detour shall be provided as shown in plans
f) Maximum duration of 24 months is permitted

3) Minimum lane width: 11' for multiple lanes, 12' for single lane cattle chutes

4) Maintain access to Schools and Bryant Avenue Pedestrian Bridge at all times.

5) Parking lane shall be maintained. Except during pavement milling and overlay and sidewalk replacement. Access to private building and businesses shall be maintained at all times

6) Bike lane between Faile Street and Bryant Avenue shall be maintained.

7) Traffic enforcement agents (TEAs) shall be provided at Bryant Avenue intersection during morning and evening peak hours.

e. From Bryant Avenue to Longfellow Avenue and Whitlock Avenue, at the future configuration of three (3) through lanes

For demolition of existing structures, construction of Bruckner Expressway, construction of ramp SS and roadway construction:

1) Double Lanes Closure (Two lanes open):
   a) Continuously
   b) Maximum duration of 24 months is permitted

2) Additional Lane Closure (One lane open) during the following hours:
   a) 11:00PM to 4:00AM, Monday night to Friday morning
   b) 12:01AM to 6:00AM, Saturday morning
   c) 12:01AM to 9:00AM Sunday morning
   d) 11:00PM to 4:00AM, Sunday night to Monday morning
   e) Traffic alternate route detour shall be provided as shown in plans
   f) Maximum duration of 24 months is permitted

3) Minimum lane width: 11' for multiple lanes, 12' for single lane cattle chutes

4) Maintain access to Parks and green spaces at all times.

5) Parking lane shall be maintained. Except during pavement milling and overlay and sidewalk replacement. Access to private building and businesses shall be maintained at all times

6) Bike lane between Bryant Avenue and Longfellow Avenue and Whitlock Avenue shall be maintained.

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f. **From Longfellow Avenue and Amtrak Bridge, at the future configuration of two (2) through lanes**

For demolition of existing structures, construction of Bruckner Expressway, construction of ramp SS and roadway construction:

1) One Lane Closure (One lane open):
   a) Continuously
   b) Maximum duration of 24 months is permitted

2) Additional Lane Closure (full closure) during the following hours:
   a) 11:00PM to 4:00AM, Monday night to Friday morning
   b) 12:01AM to 6:00AM, Saturday morning
   c) 12:01AM to 9:00AM Sunday morning
   d) 11:00PM to 4:00AM, Sunday night to Monday morning
   e) Traffic detour shall be provided as shown in plans
   f) Maximum duration of 24 months is permitted

3) Minimum lane width: 12' for single lane cattle chutes

4) Maintain access to Parks and green spaces at all times.

5) Parking lane shall be maintained. Except during pavement milling and overlay and sidewalk replacement. Access to private building and businesses shall be maintained at all times

6) Bike lane between Longfellow Avenue and Amtrak Bridge shall be maintained.

D. BRYANT AVENUE PEDESTRIAN BRIDGE

a. **For the demolition of existing pedestrian bridge and construction of bridge main spans and western ramps**

1) Full Pedestrian Bridge closure:
   a) Pedestrian bridge is allowed to be closed during summer school recess from beginning of June to end of August
   b) Maximum of two summer closures will be permitted
   c) Provide pedestrian detour as shown in plans
   d) Pedestrian access along existing sidewalk shall be maintained.
   e) Remove existing school fence and establish temporary fence during construction as shown in plans
   f) All encroachment to school shall be removed and permanent fence shall be provided as shown in plans.

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E. BRUCKNER BOULEVARD INTERSECTIONS

The Permittee must maintain existing turning lanes to and from Bruckner Boulevard to cross streets at all times, either maintaining existing turning lanes or providing temporary turning lanes to/from cross streets and as follows;

a. Critical locations require local street permits to be pulled.
b. **Barretto Street intersection:** One lane of traffic shall be maintained in each direction of Barretto Street at all times.
c. **Hunts Point Avenue intersection:** two lanes of traffic shall be maintained in each direction of Hunts Point Avenue at all times.
d. Pedestrian access and pedestrian crosswalks shall be maintained open at all times.

FULL CLOSURE

Complete roadway closure of Bruckner Expressway will be permitted for removal and installation of overhead sign structures for fifteen (15) minutes duration from 1:00 AM to 5 AM, except Holidays and embargo days. Should these operations require more than fifteen (15) minutes to complete; the above closure will be followed by a period of sufficient length for the traffic to dissipate or one (1) hour, whichever occurs first, prior to another fifteen (15) minutes closure.

6. To reserve a lane or roadway closures on primary, secondary and local streets; the Permittee must obtain a separate permit from OCMC – Highways. OCMC – Highways will facilitate obtaining these "No Fee" permits. Permits for emergency and non-emergency work may be obtained by phone and facsimile to expedite the work. The Permittee or State representative must contact this office at least one business day prior to request and reserve a lane or street closure. This will reserve the street segment(s) for your activities and facilitate the issuance of the appropriate permits. The original permits may be picked up and signed within "seventy-two" hours.

7. Significant lane closures of Arterial Highways where at any time two thirds (2/3) of the number of roadway lanes are closed between 1:00 AM and 6:00 AM or fifty percent or more of the roadway lanes are closed at other times, notification shall be given to the public via the placement of Variable Message Signs (VMS) 7 days prior to the actual closure, when possible.

8. This permit is not valid unless it is signed by both the New York City Department of Transportation representative and the authorized representative of the Permittee.

9. Section 24 - 224, Administrative Code Variance is hereby granted for hours and days stipulated above.

10. A "Holiday Construction Embargo" will be in effect on Gridlock Alert Days from mid - November (the exact dates will be published each year in the New York City Department of Transportation's OCMC yearly Holiday Embargo release, there are approximately ten (10)) to

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January 2nd. During this period, no lane or ramp closings will be permitted from 6:00 AM to Midnight except by written permission from the OCMC. This stipulation supersedes all others in this permit.

11. The Permittee agrees to assume all responsibility for injury or damages to private and/or City property caused through the operations of the permit and to save and hold harmless the City of New York and the New York City Department of Transportation from all claims and suits which may arise there from.

12. The Permittee shall be responsible to provide notification to the local Community Board and Borough President's Office prior to the commencement of work. Additionally notification shall be made to the local Councilman's office. Proof of notification must be filed with the OCMC prior to the commencement of work.

13. The Permittee shall notify the New York City Dept. of Transportation's Situation Room at (718-433-3340), the NYPD Traffic Management Center at (718-706-6062), the Chief of Emergency Medical Services at (718-422-7395) and the local fire house two (2) hours prior to his/her proposed traffic lane reductions or street closings for any purpose. The Permittee shall also immediately notify the Situation Room upon reopening and in the event of an emergency condition.

14. The Permittee shall adhere to all pertinent rules and regulations of the New York City Department of Transportation relative to the use and occupancy of street space, the provisions of his agreement and the performance of his work.

15. The Permittee shall adhere to the NYCDOT Bureau of Bridges' Special Provisions for Landscape Protection, Maintenance and Restoration, items 1.18.15 through 1.18.19, whenever and wherever any of the Permittee's activities occur within a limited access arterial highway right - of - way. Copies of these provisions may be obtained from the New York City Department of Transportation's Director of Arterial Maintenance.

16. This Permit is limited to activity performed in conformance with this agreement with the New York City Department of Transportation and does not permit any other activities, which could be a hazard or distraction to the roadway user.

17. No deviation or departure from these stipulations will be permitted without the prior written approval of the New York City Department of Transportation. Requests for such modifications shall be submitted to the OCMC a minimum of ten (10) days in advance for consideration.

18. To ensure a traffic flow at all times storage of materials and equipment shall not be permitted within the traveled way of the highway. Storage areas shall be separated from the traveled way by a clear space of 30 feet minimum width, unless such storage is placed behind concrete barrier or permanently installed bridge railing.

19. Any excavations shall be adequately fenced and/or decked over by the Permittee to preclude entry by errant vehicles, pedestrians or animals.

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20. The Permittee shall insure that construction materials and/or excavated soil and rocks temporarily stored on slopes are secured by straw bales or other effective means to prevent their movement into the travel way and clear zone (recovery zone) area.

21. When work is performed in or adjacent to sidewalk areas, a safe pedestrian walkway having a minimum width of five (5) feet shall be provided at all times by the Permittee.

22. Concurrent with construction work of this contract, if other projects on this and/or adjacent highways are under construction then the Permittee is to become familiar with the scheduling of those projects and schedule his activities accordingly. To facilitate the flow of traffic, the permissible work hours may be modified as deemed necessary by the New York City Department of Transportation.

23. In order to provide an adequate transition for the safe flow of traffic, when the Permittee's (or another Permittee's) work sites are in two (2) different lanes in the same direction, those work sites shall be separated by a distance of at least two (2) miles.

24. Warning signs and traffic safety devices shall be provided, installed, maintained and removed by the Permittee in accordance with the New York State Department of Transportation's "Manual of Uniform Traffic Control Devices". The Permittee shall provide the appropriate channelization for traffic approaching and leaving his/her worksite. The Permittee shall provide flagpersons, cones, barricades, etc. as required for public safety. The Permittee is responsible for the adequacy of the safety devices.

25. When water is being used at the work site for any purpose (i.e. concrete curing, saw cutting, etc.), the Permittee is required to insure, through any and all appropriate measures, that the water does not freeze on the roadway or sidewalks. The Permittee will be responsible to maintain a clear and safe travel path.

26. During the time a lane closure is permitted, the Permittee may intermittently stop traffic on the adjacent lane(s) of the same roadway for periods not to exceed five (5) minutes in duration for the purpose of transporting or securing equipment that may extend beyond the closed lane(s). A minimum of one (1) hour, or until the traffic queue is relieved, whichever period is shorter, is required between any two such closures.

27. Operation of a crane, derrick, shovel or other similar equipment for any and all work within the streets shall be carried out by the Permittee in accordance with the Rules, Regulations and Requirements of the New York City Department of Transportation and the New York City Department of Buildings and shall comply with all provisions of the New York City Noise Control Code. In addition, if this equipment is to be placed so that any part of the load will be superimposed on the sidewalk or roadway, the Permittee must file, with the New York City Department of Transportation, Office of Construction Mitigation and Coordination, a statement by a Professional Engineer, licensed by the State of New York, certifying the following;

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(a) That the sidewalk or roadway area and the supporting subgrade can safely bear the crane load. Should the condition of the sidewalk or roadway area require that the crane load be distributed over a larger area than afforded by the elements of the crane, the engineer shall furnish the full dimensioned details of the load distribution;

(b) That the Engineer has taken all necessary measures to ascertain that there is no vault or subway tunnel underneath the sidewalk area or that if a vault or subway tunnel does exist its roof is sufficiently strong to support the load to be superimposed thereof;

(c) That the sheeting or retaining walls supporting any excavations adjoining the sidewalk or roadway area required to carry a load have been examined by the Engineer and have been found to be sufficiently strong to support the area carrying the crane load. Should the crane be employed making any excavation adjacent to the crane, the Engineer shall specify the sheeting or retaining wall reinforcement required to support the crane.

28. A Holiday Embargo is in effect for the Holidays (as determined by the New York City Office of Payroll Administration) with the following provisions:
When a Holiday falls or is observed by the City of New York on a Monday or Friday no lane or ramp closures are permitted from noon on the previous business day to 6:01 AM on the following business day. For example if the holiday falls or is observed on Friday then no lane closure would be permitted from 12:01 PM on Thursday to 6:01 AM on Monday. If the Holiday falls or is observed on Monday then no lane closure is permitted from 12:01 PM on Friday to 6:01 AM on Tuesday. In addition when a Holiday falls or is observed midweek (Tuesday, Wednesday or Thursday) no Lane closures shall be permitted from noon on the previous business day to 6:01 AM on the following business day.

The Holiday Embargo as detailed above, is in effect for the following Holidays: New Year's Day, Mother's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. Note: for Thanksgiving Day the Embargo begins on Wednesday at 12 noon and extends to Monday 6 AM, at which time the original stipulations shall be in effect.

29. Work cannot be performed during the New York City 5 Boroughs Bike Tour and the New York City Marathon, unless granted special permission by the New York City Department of Transportation, Office of Construction Mitigation and Coordination.

30. The Permittee shall comply with the Industrial Code of the State of New York Part (Rule No.) 53 relating to Construction, Excavation and Demolition Operations at or near underground facilities. Additionally, the Permittee shall similarly notify the owners of overhead cables or other electrical or street lighting equipment in the area covered by the Permit.

31. The Permittee is reminded that the appropriate Rules and Regulations that apply to the cleaning and painting of structural steel must be rigidly followed, as specified by NYSDOT Specifications.

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32. When a contractor performs work at night, the work site shall be illuminated to the satisfaction of the Engineer-In-Charge (EIC). The EIC shall be the sole judge of when illumination is required.

33. The contractor shall be responsible for identifying his/her construction signage. The identification shall include the contracting agency, the contractor's name and the contract number. This identification shall be placed on the back of all signs.

34. The Permittee shall, at its own expense, be under absolute obligation to determine the location of and provide protection from damage or loss for all subsurface facilities and overhead structures in the permit area. In the event of any damage or loss to such subsurface facilities and overhead structures, the Permittee shall promptly replace or repair such facilities and structures, as directed by the New York City Department of Transportation or other City agency having jurisdiction thereof or by the owner thereof.

35. The City makes no representation as to the character of the fill in the streets, and voids therein, or the condition of the sidewalks. The Permittee accepts full responsibility and liability for any disturbance or damage, which may be caused to adjoining pavements, sidewalks or structures by or in connection with the permit activity. All damaged sidewalk or roadway pavements shall be restored (to the nearest full flag for sidewalks) in conformance with the Standard Specifications of the New York (City/State) Department of Transportation.

36. The Permittee shall furnish and install tarpaulins enclosing the immediate site of his cleaning and painting operations to insure complete protection of the general public and property, both on and below the roadway against possible damage from scraping, paint drippings, windblown paint, dust, concrete, etc. This permit does not constitute approval of either painting or paint removal methodology. All signs and signals shall be protected daily with clean and transparent coverings.

37. The Permittee's vehicles shall not exceed the posted weight and/or height restrictions for any street, highway, bridge or viaduct section that he/she must travel upon.

38. During the snow season, the contractor shall be required to post "LIFT PLOW" signs at all locations (in both directions if necessary) where they have installed steel plates.

39. ELECTRICAL INSPECTIONS UNIT (EIU)

Construction Stipulations to Prevent Damage to NYC Electrical Equipment

(a.) The NYCDOT Office of Construction Mitigation and Coordination (OCMC) - Highways must be contacted at telephone number 212-442-9839 or fax number 212-513-1146 at least two weeks prior to the commencement of <u>any</u> work so that a pre-construction inspection may be performed. If any repairs are made by NYCDOT EIU after the pre-construction inspection is performed, EIU shall notify OCMC so that the item(s) may be deleted from the inspection list.

(b.) NYSDOT will provide the NYCDOT Electrical Inspections Unit with a weekly schedule prior to the commencement of any excavation work, i.e. trench excavations, landscaping excavations such as for tree or bush pits, all other excavations, guiderail installations or any other installations involving drilling or the use of Hilti-bolts, or any other event when the earth gets moved on all highway surfaces, including grade level and elevated roadways, ramps, overpasses, paved and non-paved shoulder portions, over or adjacent to electrical lines, on or adjacent to the roadway, including excavation on shoulders both paved and non-paved surfaces.

(c.) Accessibility to, plus a three-foot minimum clearance, must be made available at any street light, traffic signal or ITS pole, panel box, junction box, ITS system or camera, or any other NYC electrical systems equipment.

(d.) NYCDOT will provide routine maintenance to lights in construction area.

(e.) The contractor shall perform all work with care so that any materials which are to remain in place, or which are to remain the property of NYC will not be damaged. If the contractor damages any materials which are to remain the property of NYC, the damaged materials shall be repaired or replaced in a timely manner, approved by the NYCDOT Electrical Inspections Unit, and at no cost to NYC.

(f.) In the event of damage to electrical lines, including but not limited to electrical conduit, street light poles, pull boxes, panel boxes, junction boxes, cameras, or any other NYC electrical systems equipment on or adjacent to all highway surfaces, including grade level and elevated roadways, ramps, overpasses, and paved and non-paved shoulder areas, notice must be made to the Chief of the NYCDOT/EIU at telephone number 718-786-2825, or 24-hour emergency number 718-433-3340, at the time of such occurrence. An EIU inspector will be dispatched to evaluate and document the condition and coordinate the necessary repairs. NYSDOT will conduct any trouble-shooting work. The permittee shall be permitted to conduct the necessary repairs without delay following notification to NYCDOT. If an EIU inspector is not able to respond to the jobsite when the repairs are being performed, NYS will provide pictures and/or other documentation to confirm that the appropriate work has been completed.

40. Roads used for the hauling of materials shall be kept free from debris and maintained by the Permittee and left in a condition satisfactory to the engineer-in- charge (EIC).

41. On roadways/streets where rush hour parking and/or standing regulations are posted, the Permittee shall modify his schedule to conform to those (rush hour) restrictions.

42. The Permittee shall not park his equipment or store material overnight where it is deemed to be a safety hazard to the traveling public.

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43. The Permittee shall not obstruct fire hydrants, crosswalks, pedestrian ramps, fire alarm boxes, bus stops or any public utility while performing his/her work. The Permittee may not move or remove "Bus Stop" signs without prior written approval from both the New York City Department of Transportation and the New York City Transit.

44. This is not a parking permit. The Permittee shall obey all traffic laws and regulations.

45. This Permit may be amended to cover new or unforeseen conditions at the discretion of the New York City Department of Transportation, after consultation with the Permittee. The New York City Department of Transportation reserves the right to cancel this permit at any time for any valid reason.

46. This Permit, unless terminated at the discretion of the New York City Department of Transportation, will expire on **November 30, 2023**.

APPROVED: _____

JAY JABER, P. E.
Assistant Commissioner
Permit Management and Construction Control

_____
AUTHORIZED REPRESENTATIVE OF PERMITTEE

EC: ec
8/6/2020, 3/9/2021, 3/11/21, 6/21/2022

Cc: Dagher, Campbell, Saint-Dic, Situation Room, Police Dept. (Traffic Division), Fire Department, Litigation Support, HIQA – Highway Unit-55 Water St., 7th Fl... CC file, Project file

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AMERISTAR IMPASSE II – HIGH SECURITY STEEL FENCE SYSTEM – ORNAMENTAL PALE CONSTRUCTION SPECIFICATION

AMERISTAR® PERIMETER SECURITY USA INC.
IMPASSE II®- High Security Steel Fence System – Ornamental Pale
Construction Specification - SECTION 32 31 19

PART 1 - GENERAL

1.01 WORK INCLUDED

The contractor shall provide all labor, materials and appurtenances necessary for installation of the steel corrugated pale security fence system defined herein at (specify project site).

1.02 RELATED WORK

Section ___ ___ - Earthwork
Section ___ ___ - Concrete

1.03 SYSTEM DESCRIPTION

The manufacturer shall supply a total steel ornamental pale high security fence system of the Ameristar® specify Impasse II® model, specify Trident™ design. The system shall include all components (i.e., pales, rails, posts, gates and hardware) required.

1.04 QUALITY ASSURANCE

The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.05 REFERENCES

- ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
- ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
- ASTM D523 - Test Method for Specular Gloss.
- ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint.
- ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
- ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
- ASTM F2408 – Ornamental Fences Employing Galvanized Steel Tubular Pickets.

1.06 SUBMITTAL

The manufacturer's submittal package shall be provided prior to installation.

1.07 PRODUCT HANDLING AND STORAGE

Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

1.08 PRODUCT WARRANTY

A. All structural fence components (i.e. rails, pales, and posts) shall be warranted within specified limitations, by the manufacturer for a period of 15 years from date of original purchase. Warranty shall cover any defects in material finish, including cracking, peeling, chipping, blistering or corroding.

PART 2 - MATERIALS

2.01 MANUFACTURER

A. The steel ornamental pale high security fence system shall conform to Ameristar Impasse II model, Trident 2-Rail style manufactured by Ameristar Perimeter Security Inc., in Tulsa, Oklahoma.

2.02 MATERIAL

A. Steel material for fence framework (i.e., corrugated pales, rails and posts), when galvanized prior to forming, shall conform to the requirements of ASTM A924/A924M, with a minimum yield strength of 45,000 psi (310 MPa). The steel shall be hot-dip galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 oz/ft^2 (276 g/m^2), Coating Designation G-90.

B. Material for corrugated pales shall be a nominal 2.75" x .75" x 14 Ga. The cross-sectional shape of the rails shall conform to the manufacturer's Impasse II® rail design a nominal 2" x 2" x 11 Ga. Pre-drilled holes in the Impasse II® rail shall be spaced 6" on center, providing a pale airspace of no greater than 3.25". Tamperproof fasteners shall be used to fasten each pale to rail at every intersection. Fence posts and gate posts shall meet the minimum size requirements of Table 1.

C. If applicable - Material for steel Impasse II privacy screening shall be 18ga. preformed slats, providing complete screening coverage between pales and at pale to post connections. Impasse II privacy screening shall provide screening from top rail to bottom rail, and be capable of traversing terrain without impeding the raking capabilities of the fencing panel. Privacy screening not available for Impasse II Anti-Scale model.

2.03 FABRICATION

A. Pales, rails and posts shall be pre-cut to specified lengths. Impasse II rails shall be pre-punched to accept tamperproof security fasteners. Post flange shall be pre-punched to accept rail to post attachment. Post web shall be punched providing a clear opening for interior of rails to align throughout the entire system for affixing conduit, video cabling, IDS wiring, and other components for a complete systems integration. Impasse II rails shall be attached to post flange providing a bracket-less design at each intermediate post.

B. The manufactured galvanized framework shall be subjected to the PermaCoat® thermal stratification coating process (high-temperature, in-line, multi-stage, multi-layer) including, as a minimum, a six-stage pretreatment/wash, an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The base coat shall be a thermosetting epoxy powder coating (gray in color) with a minimum thickness of 2 mils (0.0508mm). The topcoat shall be a "no-mar" TGIC polyester powder coat finish with a minimum thickness of 2 mils (0.0508mm). The color shall be (specify Black, Bronze, White, or Desert Sand). The stratification-coated framework shall be capable of meeting the performance requirements for each quality characteristic shown in Table 2.

C. Completed panels shall be capable of supporting a 400 lb. load (applied at midspan) without permanent deformation. Panels shall be biasable to a 30˚ change in grade.

D. Impasse II fence system shall be designed to minimize the system impedance to comply with IEEE grounding requirements. No additional grounding material, beyond the structure grounding lug installation, will be required to create a safe low resistance fence system. By way of fence construction, the entire fence system is inherently grounded without the need for any additional work. Grounding location at the post is for taking the fence system to site ground.

E. Swing gates shall be fabricated using 2" sq. x 12ga rail, 2" sq. x 12ga. gate ends, and 2.75" x .75" x 0.075 pales. Gates that exceed 6' in width will have a 2" sq. x 11ga. intermediate upright. All rail and upright intersections shall be joined by welding. All pale and rail intersections shall also be joined by welding.

F. Sliding cantilever gates shall be TransPort IS design matching style, height, and color of fence system. The dual enclosed track slide gate shall be an aluminum component design using tracks, uprights, pales, hardware, fittings, and fasteners. Gate installation shall comply with latest ASTM F2200 standards for automated gates, regardless if the gate is of manual operation.

G. Pedestrian swing gates shall be self-closing, having a gate leaf no larger than 48" width. Integrated hinge-closer set (2 qty) shall be ADA compliant that shall include a variable speed and final snap adjustment with compact design (no greater than 5" x 6" footprint). Hinge-closer set (2 qty) shall be tested to a minimum of 500,000 cycles and capable of self-closing gates up to a maximum gate weight of 260 lbs. and maximum weight load capacity of 1,500 lbs. Hinge-closer device shall be externally mounted with tamper-resistant security fasteners, with full range of adjustability, horizontal (.5" - 1.375") and vertical (0 - .5"). Maintenance free hinge-closer set shall be tested to operate in temperatures of negative 20 F to 200 F degrees, and swings to negative 2 degrees to ensure reliable final lock engagement.

PART 3 - EXECUTION

3.01 PREPARATION

All new installation shall be laid out by the contractor in accordance with the construction plans.**3.02 FENCE INSTALLATION**
Fence post shall be spaced according to Table 3, plus or minus ¼". For installations that must be raked to follow sloping grades, the post spacing dimension must be measured along the grade. Fence panels shall be attached to the line and end posts with fasteners supplied by the manufacturer. Attachment to corner post shall be made using brackets and fasteners supplied by the manufacturer (See Figure 1). Posts shall be set in concrete footers having a minimum depth of 36" (Note: In some cases, local restrictions of freezing weather conditions may require a greater depth). The "Earthwork" and "Concrete" sections of this specification shall govern material requirements for the concrete footer. Posts setting by other methods such as plated posts or grouted core-drilled footers are permissible only if shown by engineering analysis to be sufficient in strength for the intended application.

3.03 FENCE INSTALLATION MAINTENANCE

When cutting/drilling rails or posts adhere to the following steps to seal the exposed steel surfaces; 1) Remove all metal shavings from cut area. 2) Apply zinc-rich primer to thoroughly cover cut edge and/or drilled hole; let dry. 3) Apply 2 coats of custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1-3 above will negate warranty. Ameristar spray cans or paint pens shall be used to prime and finish exposed surfaces; it is recommended that paint pens be used to prevent overspray. Use of non-Ameristar parts or components will negate the manufactures' warranty.

3.04 GATE INSTALLATION

Gate posts shall be spaced according to the manufacturers' gate drawings, dependent on standard out-to-out gate leaf dimensions and gate hardware selected. Type and quantity of gate hinges shall be based on the application; weight, height, and number of gate cycles. The manufacturers' gate drawings shall identify the necessary gate hardware required for the application. Gate hardware shall be provided by the manufacture of the gate and shall be installed per manufacturer's recommendations.

3.05 CLEANING

The contractor shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.

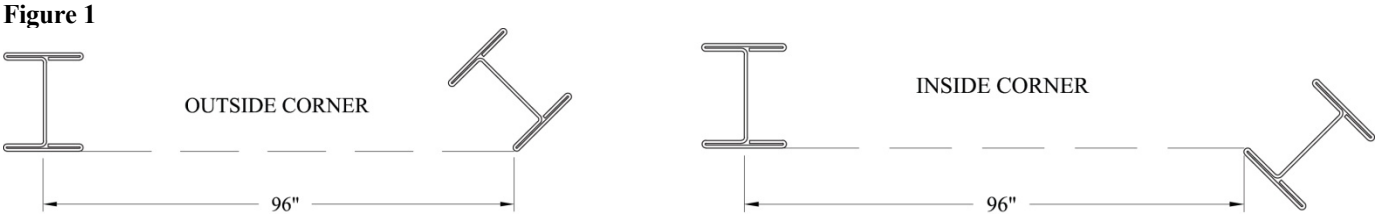
Table 1 – Minimum Sizes for Impasse II® Posts				
Fence Posts (Nominal)	Panel Height			
4” x 2.75” x 11 Ga. I-Beam	Over 8’ Height up to & including 10’ Height			
Gate Leaf	Gate Height			
	Up to & Including 6’	Over 6’ Up to & Including 8’	Over 8’ Up to & Including 10’	Over 12’
Up to 4’	3” x 12Ga.	3” x 12 Ga.	4” x 11 Ga.	4” x 11 Ga.
4’1” to 6’	3” x 12Ga.	3” x 12 Ga.	4” x 11 Ga.	4” x 11 Ga.
6’1” to 8’	4” x 11 Ga.	6” x 3/16”	6” x 3/16”	6” x 3/16”
8’1” to 10’	4” x 11 Ga.	6” x 3/16”	6” x 3/16”	6” x 3/16”
10’1” to 12’	6” x 3/16”	6” x 3/16”	6” x 3/16”	8” x 1/4"
12’1” to 16’	6” x 3/16”	6” x 3/16”	8” x 1/4”	8” x 1/4"

Table 2 – Coating Performance Requirements		
Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 3,500 hours (Scribed per D1654; failure mode is accumulation of 1/8” coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625” ball).
Weathering Resistance	D2244, D523 (60˚ Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

Table 3 – Impasse II® Post Spacing		
Span	8’ Nominal (95” Rail)	
	Line & End Posts	
Post Size		4” x 2.75” x 11 Ga. I-Beam
Post Settings ± ¼” O.C.		96”

**For Corner Posts see Figure 1*

Figure 1



The following Special Specifications are attached herein:

ITEM 206.04010011 - PNEUMATIC EXCAVATION AND BACKFILL OF TRENCHES
ITEM 206.04020011 - PNEUMATIC EXCAVATION AND BACKFILL OF TEST PITS
ITEM 502.RLCF6011 – PERFORMANCE ENGINEERED MIXTURE – PORTLAND CEMENT CONCRETE PAVEMENT
ITEM 504.00000011 – PERFORMANCE ENGINEERED CONCRETE MIXTURE FOR PAVEMENTS
ITEM 555.02000001 – CONCRETE FOR STRUCTURES CLASS MP (MASS PLACEMENT)
ITEM 555.80020001 – CRACK REPAIR BY EPOXY INJECTION (RESTORATION)
ITEM 557.01040018 – LIGHTWEIGHT, HIGH – PERFORMANCE SUPERSTRUCTURE SLAB WITH INTEGRAL WEARING SURFACE – BOTTOM FORMWORK REQUIRED
ITEM 557.11010003 – INTEGRAL PRECAST CONCRETE BARRIER
ITEM 557.2500NN16 – CRACK SEALING USING HIGH MOLECULAR WEIGHT METHACRYLATE – LINEAR CRACKS
ITEM 557.2600NN16 – CRACK SEALING USING HIGH MOLECULAR WEIGHT METHACRYLATE – FLOODING
ITEM 557.64010103 – PRECAST CONCRETE DECK – TYPE 1 FRICTION
ITEM 557.6601NN16 – ULTRA-HIGH PERFORMANCE CONCRETE (UHPC) TYPE 1
ITEM 559.16960118 – PROTECTIVE SEALING OF STRUCTURAL CONCRETE
ITEM 559.90040011 – FIELD APPLIED SACRIFICIAL WAX GRAFFITI-RESISTANT COATING
ITEM 559.91100010 – ANTI-GRAFFITI PROTECIVE COATING
ITEM 582.99000016 – EMBEDMENT OF GALVANIC ANODES IN CONCRETE
ITEM 584.40000009 – POLYMER OVERLAY WEARING SURFACE FOR STRUCTURAL SLABS (PPC)
ITEM 584.50010018 – THIN POLYMER (EPOXY) OVERLAYS FOR STRUCTURAL SLABS
ITEM 601.04020011 – METHYL METHACRYLATE COLOR SURFACE TREATMENT FOR PAVEMENTS (MMA-CST)
ITEM 603.95XX0011 – DUCTILE IRON PIPE ON CRUSH STONE BEDDING
ITEM 604.020X0011 – CATCH BASIN – TYPES 1-3 (NEW YORK CITY)
ITEM 604.04020011 – NYC STANDARD FOR 4 FOOT DIAMETER PRECAST MANHOLE
ITEM 604.04030011 – NYC STANDARD FOR 5 FOOT DIAMETER PRECAST MANHOLE
ITEM 604.04850011 – NYC STANDARD MANHOLE TYPE A-1
ITEM 604.04860011 – DROP PIPE MANHOLE (NYC)
ITEM 604.04890011 – NYC STANDARD MANHOLE TYPE A-3
ITEM 606.31090011 - LOW PROFILE CONCRETE BARRIER
ITEM 607.7XXYYN39 – STEEL FENCE AND GATE – NYCDPR
ITEM 607.98010111 – TEMPORARY CHAIN-LINK FENCE
ITEM 609.26020111 – CONCRETE CURB, STEEL FACED (NYCDOT), TYPE D
ITEM 611.19010024 – POST PLANTING CARE WITH REPLACEMENT-MAJOR DECIDUOUS TREES
ITEM 611.19020024 – POST PLANTING CARE WITH REPLACEMENT-MINOR DECIDUOUS TREES
ITEM 611.19030024 – POST PLANTING CARE WITH REPLACEMENT-CONIFEROUS TREES
ITEM 611.19040024 – POST PLANTING CARE WITH REPLACEMENT- DECIDUOUS SHRUBS
ITEM 611.19050024 – POST PLANTING CARE WITH REPLACEMENT-EVERGREEN SHRUBS

ITEM 611.19060024 – POST PLANTING CARE WITH REPLACEMENT-VINES, GROUNDCOVERS
ITEM 611.19070024 – POST PLANTING CARE WITH REPLACEMENT-HERBACEOUS PLANTS
ITEM 613.70XX0011 – BIRD REPELLANT SYSTEM
ITEM 615.0101NN10 - LITTER (TRASH) RECEPTACLE
ITEM 615.33XX0011 - TEMPORARY WOODEN TREE GUARD – NYCDPR
ITEM 615.43000011 - GROUND SURFACE PROTECTION MATS
ITEM 619.10040020- PORTABLE WORK ZONE CAMERA
ITEM 619.22970011 – TRAFFIC ENFORCEMENT AGENTS
ITEM 634.20010111 – PRIMARY PROTECTIVE SHIELDS
ITEM 634.20010211 – SECONDARY PROTECTIVE SHIELDS
ITEM 634.900X0011 – RODENT AND VERMIN CONTROL
ITEM 634.99010017 – BUILDING CONDITION SURVEY
ITEM 634.99020017 – VIBRATION MONITORING (NONBLASTING)
ITEM 635.01030011 – CLEANING AND PREPARATION OF PAVEMENT FOR PAVEMENT MARKING – STRIPES
ITEM 637.31XX0020 – INSPECTION VEHICLE (MAXIMUM BID)
ITEM 637.4000NN20 – WEBCAM SYSTEM
ITEM 651.03040039 – FIRE ALARM CABLE (NEW YORK CITY) 04 PAIR
ITEM 651.06010011-FIRE DEPARTMENT MANHOLE (NEW YORK CITY) - TYPE A
ITEM 651.10010011 – INSTALL FIRE ALARM FOUNDATION AND POST (NEW YORK CITY)
ITEM 651.11000011 - REMOVE AND DISPOSE OF FIRE ALARM AND POLICE CALL BOXES
ITEM 655.00XX0011 – CAST FRAME AND GRATES AND MANHOLE COVERS
ITEM 680.17006011 – 60 FOOT CAMERA POLE
ITEM 680.51960011- FURNISH AND INSTALL CONCRETE FIBER OPTIC PULL BOX
ITEM 680.53000111-S.S. NEMA-4X STRUCTURE MOUNTED PULL BOX (16”X12”X8”)
ITEM 680.81500010 – PEDESTRIAN COUNT-DOWN TIMER MODULE
ITEM 680.95020615 – SERVICE CABLE 2 CONDUCTOR, NO. 06 AWG
ITEM 680.95533211 – METER CABINET
ITEM 680.95663211 – RANGING RADAR DETECTOR ASSEMBLY
ITEM 680.96026011 – FIBER OPTIC CABLE, SINGLE MODE – 60 FIBERS
ITEM 680.96494811 – FIBER OPTIC TERMINATION CABLE 12 FIBER (IN CONDUIT)
ITEM 680.99120011 - – FIBER OPTIC INNERDUCT, 1 CHANNEL
ITEM 683.09150011 – TRANSMIT TAG READER
ITEM 683.09150111 – TRANSMIT ANTENNA
ITEM 683.09230511 – FIELD HARDENED ETHERNET SWITCH TYPE II
ITEM 683.10110008 – HD IP CAMERA ASSEMBLY – BARREL TYPE
ITEM 683.92211208 – FIBER OPTIC CABLE – 12 FIBERS
ITEM 800.01000015 – DESIGN BUILD – DESIGN SERVICES
ITEM 800.02000015 – DESIGN BUILD – CONSTRUCTION INSPECTION SERVICES
ITEM 800.03000015 – DESIGN BUILD – QUALITY CONTROL SERVICES
ITEM 800.0400NN15 – DESIGN BUILD – EXTRA WORK
ITEM 800.04200015 – DESIGN BUILD – RAILROAD NO SHOW FORCE ACCOUNT WORK
ITEM 800.05000015 – DESIGN BUILD – SITE MOBILIZATION
ITEM 800.0600NN15 – DESIGN BUILD – CONSTRUCTION WORK
ITEM 800.06XXNN15 – DESIGN BUILD – CONSTRUCTION WORK – STRUCTURAL REPAIRS
ITEM 800.1000NN15 – DESIGN BUILD – UTILITY RELATED WORK

ITEM 582.99000016 - EMBEDMENT OF GALVANIC ANODES IN CONCRETE

DESCRIPTION:
The work shall consist of installing galvanic anodes and testing for electrical conductivity at locations indicated on the plans or as directed by the Engineer.

MATERIALS:

A. Embedded galvanic anodes shall be compact, pre-manufactured, and consist of electrolytic High Grade Zinc in compliance with ASTM B 418 - Type 1 or Type II, cast around a pair of steel tie wires and encased in a highly alkaline cementitious shell.

The anode shall be an approved product as noted in the table below or an approved equal:

Product Name	Manufacturer	Payment Factor
Sentinel-GL[1]	Euclid Chemical Company	0.5
Galvashield XP Compact[1]	Vector Corrosion Technologies, Inc	0.5
Galvashield XP	Vector Corrosion Technologies, Inc	1.0
MasterProtect 8065CP	BASF Construction Chemicals, LLC – Building Systems	1.0
FerroGard 650	Sika Corp	1.0

1. Product requires approximately double the quantity of other products due to lower zinc content.

B. Reinforcement steel tie wire shall be W 0.3 (minimum diameter .0625 in), or heavier meeting the requirements of ASTM A 1064.

C. Electrical sealant shall be as specified by the anode manufacturer.

CONSTRUCTION DETAILS:

The type of anode shall be as specified in the contract documents.

The Contractor shall embed Galvanic Anodes in concrete where indicated in the contract documents or where directed by the Engineer.

Installation methods shall be as specified by the anode manufacturer and shall be approved by the DCES.

ITEM 582.99000016 - EMBEDMENT OF GALVANIC ANODES IN CONCRETE

METHOD OF MEASUREMENT:

This work will be measured by the actual number of galvanic anodes installed in accordance with the contract documents multiplied by the payment factor shown in the Approved List table in the Materials section above.

BASIS OF PAYMENT:

The unit price bid per galvanic anode shall include the cost of all material, equipment, and labor necessary to install, connect, test the anode, and electrically seal the splices and/or connections,. Payment for concrete removal, steel reinforcement repair/replacement, and concrete replacement will be paid for under their respective items as shown in the contract documents.

601.04020011– Methyl Methacrylate Color Surface Treatment for Pavements (MMA-CST)

DESCRIPTION. Under this work, the Contractor shall furnish and apply MMA-CST at the location and in accordance with patterns as specified on provided Work Orders or Plans or as ordered by the Engineer and in conformance with these specifications.

MATERIALS. The MMA-CST shall be capable of application on new and existing asphalt and portland cement concrete surfaces, and shall:

- Be VOC compliant and lead chromate free.
- Not contain 0.1% or more of any chemical listed by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or regulated by the US Occupational Safety and Health Administration (OSHA) as a carcinogen.
- Conform to current Federal, State and Local air pollution regulations, including those for the control (emission) of volatile organic compounds (VOC).
- Be packaged and stored in accordance with the manufacturer's instructions and requirements for shelf life and storage conditions in original unopened containers. Shipping documents and containers shall have identification numbers or batch dates for confirmation of when products were manufactured, clearly labeled as to the type material and the ratio of the components to be mixed by volume as well as showing resin or hardener components, brand name, name of manufacturer, lot or batch number, temperature range for storage, expiration date and the quantity contained. Include any special instructions regarding mixing and the Material Safety Data Sheets. This information shall be made available for inspection at any time.
- Be colored green for bicycle lanes, terra cotta for bus lanes, or truffle for plazas as specified on provided Work Orders or Plans. Colors for each work type shall be approved by the Engineer prior to the material purchase by the Contractor.
- Incorporate aggregates compatible approved by the MMA manufacture for compatibility and handling in compliance with manufacturer recommendations – providing a surface friction level equivalent or better than existing pavement.

APPROVED MATERIALS. Products appearing on the list below with a Manufacturer's certification that the product meets the requirements of this specification, or a Product approved equal as determined by the Engineer, are deemed acceptable for use:

Color-Safe®
Transpo Industries, Inc.
20 Jones Street, New Rochelle, NY 10801
800-321-7870 www.transpo.com

CycleGrip®MMAX
Ennis-Flint
115 Todd Court, Thomasville, NC 27360
336-475-6600 www.ennisflint.com

Safetrack®SC
Stirling Lloyd North America
152 Rockwell Road, Building A, Newington, CT 06111
860-666-5008 www.northamerica.stirlinglloyd.com

CONSTRUCTION DETAILS.

General. MMA-CST shall be placed as shown on the Contract or Work Order Documents or as ordered by the Engineer.

Before any surface treatment work is begun, a schedule of operations shall be submitted for the approval of the Engineer and his/her authorized representative. At least five (5) days prior to starting application, the Contractor shall provide the Engineer with the MMA color manufacturer's written instructions for use. These instructions shall include, but not be limited to, material mixing ratios and application temperatures.

When MMA-CST is applied under traffic, the Contractor shall provide all necessary flags, markers, signs, etc. in accordance with the MUTCD to maintain and protect traffic, and to protect marking operations and the markings until thoroughly set.

The Contractor shall be responsible for removing, to the satisfaction of the Engineer, all tracking marks, spilled MMA-CST applied in unauthorized areas.

Atmospheric Conditions. MMA-CST shall only be applied during conditions of dry weather and on dry pavement surfaces. At the time of installation the pavement surface temperature shall be at or above manufacturer recommendations.

Surface Preparation. The Contractor shall clean the pavement and existing durable markings to the satisfaction of the Engineer. At the time of application, all pavement surfaces and existing durable markings shall be free of oil, dirt, dust, grease and similar foreign materials.

Application Equipment. Equipment for the placement of MMA-CST shall be approved by the Engineer prior to the start of work. Application equipment shall include:

1. Squeegees designed for heavy duty use (3/16” notched)
2. Rollers that are medium nap in texture and contain a roller cage and handle
3. High speed, high torque drills capable of supplying enough power to thoroughly mix MMA-CST additives when paired with a paint mixing paddle

Application. MMA-CST shall be placed at the width, thickness, and pattern designated by the Contract Documents. Surface treatment operations shall not begin until applicable surface preparation work is completed and approved by the Engineer, and the atmospheric conditions and pavement surface temperature are acceptable to the Engineer.

MMA-CST shall be poured onto pavement and evenly distributed using a squeegee. The applied film thickness shall be 95 +/- 5 mils. Trowels may be used in cases where squeegees are not effective. Rollers should then be used to distribute MMA-CST, remove working lines and create a consistent anti-slip texture. Masking tape or similar should be removed as material gels, but before it cures. If required by manufacturer, all concrete surface areas to be coated with MMA-CST shall be masked with primer prior to MMA-CST application.

Defective Results. MMA-CST, which after application and curing is determined by the Engineer to be defective and not in conformance with this specification, shall be repaired. Repair of defective MMA-CST shall be the responsibility of the Contractor and shall be performed to the satisfaction of the Engineer as follows:

1. Insufficient film thickness:

Repair Method. Prepare the surface of the MMA-CST to the satisfaction of the Engineer. - Cleaning and Surface Preparation. Repair shall be made by reapplying MMA-CST over the cleaned surface in accordance with the requirements of this specification at the full thickness.

2. Uncured or discolored MMA-CST and/or insufficient bond (to pavement surface or existing durable marking):

   Repair Method. The defective MMA-CST shall be completely removed and cleaned to the underlying pavement surface to the satisfaction of the Engineer.

   After surface preparation work is complete, repair shall be made by reapplying MMA color over the cleaned pavement surface in accordance with the requirements of this specification.

Other defects not noted above, but determined by the Engineer to need repair, shall be repaired or replaced as directed by and to the satisfaction of the Engineer.

All work in conjunction with the repair or replacement of defective MMA color shall be performed at the Contractor's expense.

Personal Protective Equipment. Follow all exposure, respiratory and personal protective equipment controls, handling and safety precautions and spill and disposal procedures as identified by s safety data sheets (SDS), labels and other manufacturer's recommendations for the products used.

WORK ZONE TRAFFIC CONTROL (WZTC). The Contractor is responsible for ensuring appropriate WZTC in compliance with the MUTCD appropriate for the dry time of the selected material applied. The Contractor is responsible to ensure adequate WZTC to prevent those walking, skating, bicycling, and driving from coming into contact with applied material that is still capable of being tracked. The Contractor shall be liable for such tracking and property damage should it occur.

METHOD OF MEASUREMENT. The quantity for payment, in square feet of MMA-CST, shall be computed within the payment lines shown on the plans, Work Order, or as otherwise ordered in writing by the Engineer.

BASIS OF PAYMENT. The accepted quantities of MMA-CST will be paid for at the contract unit price, which shall include the cost of furnishing all labor, materials and equipment to satisfactorily complete the work. The cost of removal of concrete curing compounds and existing pavement markings will be paid under separate items and are not included in this item.

Payment will be made under:

Item No.	Item	Pay Unit
601.04020011	Methyl Methacrylate Color Surface Treatment for Pavements	Square Foot

ITEM 613.70XX0011 - BIRD REPELLANT SYSTEM

DESCRIPTION

This work shall consist of furnishing and installing a bird repellant system(s), at the locations indicated in the contract documents, in accordance with the contract documents, and as directed by the Engineer.

MATERIALS

Bird repellant spike, coil, or netting systems, shall be from the following manufacturers:

Bird-Flite
as manufactured by
Bird Barrier America Inc.,
20925 Chico Street
Carson, CA 90746
310-527-8000
https://birdbarrier.com

Spikes System
as manufactured by
BIRD-X Inc.,
300 N Oakley Blvd
Chicago, IL 60612
1-800-662-5021
www.bird-x.com

Bird Coil
as manufactured by
Bird Barrier America, Inc.
20925 Chico Street
Carson, CA 90746
310-527-8000
https://birdbarrier.com

Bird Coil Bird Repellent
as manufactured by
Bird Busters
707 South Gulfstream Avenue #405
Sarasota, FL 34236
866-915-8225
www.birdbusters.com

StealthNet System
as manufactured by
Bird Barrier America Inc.
20925 Chico Street
Carson, CA 90746
310-527-8000
https://birdbarrier.com

Bird Netting
as manufactured by
BIRD-X, Inc.
300 N Oakley Blvd.
Chicago, IL 60612
1-800-662-5021
www.bird-x.com

ITEM 613.70XX0011 - BIRD REPELLANT SYSTEM

	Avi Angle
BirdSlide	
as manufactured by	as manufactured by
Bird Barrier America Inc	BIRD-X Inc.
20925 Chico Street	300 N Oakley Blvd.
Carson, CA 90746	Chicago, IL 60612
370-527-8000	1-800-662-5021
https://birdbarrier.com	www.bird-x.com

or equal as approved by the Engineer

Bird repellant systems shall be attached to structural steel and concrete surfaces through the use of adhesive compounds recommended by the manufacturer of the approved system.

CONSTRUCTION DETAILS

The Bird Repellant Systems shall be installed in strips. Refer to the contract documents for additional information/details.

Horizontal and sloped surfaces underneath bridge superstructures that may be used as nesting sites shall be protected.

The adhesive compound shall be applied in accordance with the manufacturer's specifications. Recommendations regarding the adhesive compounds' drying time, if any, shall be strictly followed.

Care shall be taken that all required surfaces are covered. Netting systems shall be installed to provide complete enclosures of the undersides of bridge superstructures.
The Contractor shall not drill holes in any structural steel or concrete for this application without

the written permission.

METHOD OF MEASUREMENT

This work will be measured:

- as the total **linear feet** of bird repellant systems (spike or wire coil) satisfactorily installed in accordance with this specification, OR
- as the total **square feet** of bird repellant system, netting satisfactorily installed in accordance with this specification.

BASIS OF PAYMENT

The unit price bid per linear foot or square foot of bird repellant system (spike or netting), shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work.

Payment will be made under:

Pay Item	Description	Unit
613.70010011	Bird Repellant System, Single Row Spike	Feet
613.70020011	Bird Repellant System, Double Row Spikes	Feet
613.70030011	Bird Repellant System, Triple Row Spikes	Feet
613.70040011	Bird Repellant System, Triple Row Extra Wide Spikes	Feet
613.70050011	Bird Repellant System, Wire Coils	Feet
613.70060011	Bird Repellant System, Netting	Square Feet
613.70070011	Bird Repellant System, Sliders	Feet

635.01030011 – CLEANING AND PREPARATION OF PAVEMENT FOR PAVEMENT MARKING - STRIPES

635.02030011 – CLEANING AND PREPARATION OF PAVEMENT FOR PAVEMENT MARKING - LETTERS

635.03030011 – CLEANING AND PREPARATION OF PAVEMENT FOR PAVEMENT MARKING - SYMBOLS

635.04030011 – CLEANING AND PREPARATION OF PAVEMENT FOR PAVEMENT MARKING - COLOR SURFACE TREATMENT

DESCRIPTION. This work shall consist of cleaning and preparing portland cement and bituminous pavement surfaces for the application of reflectorized pavement marking materials utilizing a combination of grinding and water blasting – both with vacuum recovery of debris. Examples of pavement markings requiring this item include, but are not limited to, paint, MMA, polyurea, thermoplastic and epoxy marking materials.

CONSTRUCTION DETAILS.

General. The work required to clean and prepare pavement surfaces shall be performed in accordance with these specifications, the contract documents and to the satisfaction of the Engineer. Water blasting with vacuum recovery shall be used for all applications of pre-treatment. Grinding with vacuum recovery may be used prior to the water blasting to improve removal efficiency of old lines in a manner that minimizes damage to the pavement surface.

Before any work is begun, a schedule of operations shall be submitted for the approval of the Engineer. When the work is conducted under traffic, the Contractor shall supply all necessary flags, markers, signs, and other devices to maintain and protect traffic.

Whenever grinding and water-blasting are performed, the work shall be conducted in such a manner that the finished pavement surface is not damaged or left in a pattern that will mislead or misdirect the motorist. Any debris not picked up by vacuum recovery that remains on the roadway, including broken parts from cleaning equipment, shall be removed and disposed of in a manner satisfactory to the Engineer.

Limits of Work. Cleaning and surface preparation work shall be confined to the surface area specified for the application of pavement marking materials; or the surface area of existing pavement markings that is specified for removal on the plans, or as directed by the Engineer.

Surface preparation work includes cleaning for lines or cleaning for letters and symbols. Lines will be meant to include: broken line; dotted line; channelizing line; barrier lines; stop lines; crosswalk line and crossbars.

When lines are cleaned, the area of preparation will be the width of the new pavement marking, or existing line, plus 1 inch on each side. When letters and symbols are cleaned the area of preparation will be sufficiently large to accommodate the new marking, or to remove the existing marking.

Cleaning Concrete Curing Compounds. On new portland cement concrete pavements, cleaning operations shall not begin until a minimum of 30 days after the placement of concrete. All new concrete pavements shall be cleaned by water blasting. When water blasting is performed, pavement markings shall be applied no sooner than 24 hours after the blasting has been completed.

The extent of the blasting work shall be to clean and prepare the concrete surface such that:

A. There is no visible evidence of curing compound on the peaks of the textured concrete surface.

B. There are no heavy puddled deposits of curing compound in the valleys of the textured concrete surface.

C. All remaining curing compound is intact; all loose and flaking material is removed.

D. The peaks of the textured pavement surface are rounded in profile and free of sharp edges and irregularities.

Cleaning Existing Pavement Markings. Existing pavement markings shall be cleaned for the purpose of:

A. Preparing the pavement surface for the application of new pavement markings in the same location as the existing markings.

B. To remove existing markings that are in good condition which, if allowed to remain, will interfere with or otherwise conflict with newly applied marking patterns.

It shall be understood that in this context cleaning means the removal of an existing marking. It is not intended that all deteriorated existing pavement markings be removed. Example: If a new marking is applied to an unmarked "gap" in a broken line and the existing broken line pattern is worn or deteriorated, as determined by the Engineer, to the extent that it is not misleading or confusing to the motorist, the existing markings do not require removal.

Pavement markings shall be cleaned to the extent that 95% to 100% of the existing marking is removed. Removal operations shall be conducted in such a manner that no more than moderate color and/or surface texture change results on the surrounding pavement surface.

The determination of acceptable removal will be made by judgment of the Engineer and will be guided by the Department's pictorial standards of acceptable marking removal. Pictorial standards are available from the NYSDOT Materials Bureau.

Replacement of Pavement Markings. The Contractor shall not remove existing pavement markings and leave the highway unmarked overnight.

Disposal of Waste Collected By Vacuum Recovery and Debris Removal. Water blasting equipment used shall recover a minimum of 90% of water applied – leaving no standing water. Vacuumed water shall be filtered for re-use. Any wastewater and collected solid waste shall be disposed of in accordance with all federal, state, and local requirements. Water blasting shall not be performed more than 48 hours prior to PSM installation and the pavement shall be completely dry prior to PSM installation – time varying with temperature and humidity as needed.

OPERATOR REQUIREMENTS. Operators of water blasting and grinding equipment shall have current certification of having successfully completed equipment manufacture's training for each type, make, and model of equipment used. A copy of such certification shall be provided to the Engineer when requested. Such operators shall take care to remove old and/or conflicting markings and to clean the surface thoroughly while preventing damage to the pavement. The Engineer may disallow any operator

to use water blasting and grinding equipment if the operator is deemed to lack the skill and judgment required to adequately prepare the pavement for markings or to prevent unnecessary pavement damage.

METHOD OF MEASUREMENT. Surface cleaning and preparation of pavement surfaces for lines will be measured in feet along the centerline of the prepared surface and will be based on a nominal 4 inches wide line. Measurement for cleaning surfaces for line widths greater than the nominal 4 inches will be made by the following method:

$$\frac{\textit{Nominal Existing Width of Line (inches)} \times \textit{Length (feet)}}{\textit{4 (inches)}}$$

No payment will be made for the additional 1 inch of cleaning on each side of the line beyond "Limits of Work" section defined above.

No payment will be made for cleaning the number of feet of unmarked gaps between broken or dotted line segments.

Cleaning and preparation of letters and symbols on pavement surfaces will be measured by each unit cleaned. A unit will consist of one letter or one symbol. Example: "STOP" would be measured as four (4) units.

The Engineer will adjust the quantities of these items as required to meet field conditions. This may result in substantial increases or decreases of the proposal quantities.

BASIS OF PAYMENT. The contract unit price shall include the cost of furnishing all labor, materials and equipment to satisfactorily complete the work – including the cost of work zone traffic control as needed. The Engineer shall determine if separate payment is justified for removal of conflicting lines/letters/symbols/color in addition to payment for surface preparation of new lines/letters/symbols/color to be installed. No payment will be made under this item for the removal of pavement markings required under the section "**Defective Pavement Markings".**

Payment will be made under:

Item No.	Item	Pay Unit
635.01030011	Cleaning and Preparation of Pavement for Pavement Marking – Stripes	Feet
635.02030011	Cleaning and Preparation of Pavement for Pavement Marking – Letters	Each
635.03030011	Cleaning and Preparation of Pavement for Pavement Marking – Symbols	Each
635.04030011	Cleaning and Preparation of Pavement for Pavement Marking – Color Surface Treatment	Square Feet

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ITEM 680.96023611 - FIBER OPTIC CABLE, SINGLE MODE – 36 FIBERS
ITEM 680.96026011 - FIBER OPTIC CABLE, SINGLE MODE – 60 FIBERS

DESCRIPTION

Under these items, the Contractor shall furnish and install the required single mode fiber optic cable used for the communications backbone, distribution network and equipment drops, passive components and miscellaneous equipment necessary for a complete cable plant as shown in the plans and as directed by the Engineer. Backbone, data distribution and equipment drops refer to the functional application of the cable, as defined below, and not the type of cable.

- Backbone fiber will carry high speed SONET data and multiplexed video between the hubs and JTOC
- Distribution fiber carries video from the CCTV cameras and data from the field devices to the hubs.
- Drop cable connects field devices to the distribution fiber.

The quantity of fibers contained in each cable shall be in accordance with the plans.

The Contractor shall provide all passive components required to form a complete cable plant including, but not limited to, connectors and breakout kits and ancillary components required for the installation of the cable plants including terminators, moisture and water sealants cable caps and cable management devices such as devices for the racking of slack cable in pull boxes. The components supplied shall be commercially available state-of-the-art components suitable for this application.

All fibers in the fiber optic cable shall be spliced, terminated, or both in the field cabinets and pull boxes designated in these contract documents or as directed by the Engineer. The Contractor shall furnish all equipment required for the installation and testing of the cable. Payment for splice enclosures and splicing will be paid under the items Fiber Optic Splice Enclosure - Type 1 and Fiber Optic Splice Enclosure - Type 2.

MATERIALS

The single mode fiber optic cable shall incorporate a water swellable tape, loose buffer tube cable design. The fiber optic cable shall be suitable for installation in conduit or lashed to messenger cable in an outside cable plant environment. The cable shall be all dielectric and shall consist of the number of fibers specified in the plans.

The cable shall meet the requirements of the United States Department of Agriculture Rural Utility Service (RUS) 7 CFR1755.900, the requirements of ANSI/ICEA Standard for Outside Fiber Optic Outside Plant Communications Cable, ANSI/ICEA S-87-640-1992 and shall be new, unused and of current design and manufacturer. The cable manufacturer shall have had a minimum of three years experience manufacturing fiber optic cable of a similar design. Proof of this experience shall be submitted to the Engineer as part of the ten-day submission.

The cable shall meet the following requirements:

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Optical Requirements

a. Maximum attenuation at 1310 nm ≤ 0.4 decibels/kilometer (dB/km)
1550 nm ≤ 0.4 dB/km

Fiber attenuation shall be uniform with no discontinuities greater then 0.1 dB. The attenuation at 1383 ± 3 nm shall not exceed 2.1 dB/km. The attenuation measurements shall be in accordance with EIA/TIA Standards FOTP-20, 59, 61 and 78. The average change in attenuation at extreme operational temperatures -40ºF to 158ºF shall not exceed 0.05 dB/cm at 1550 nm. The magnitude of the maximum attenuation change of each individual fiber shall not be greater than 0.15 dB/km at 1550 nm. The change in attenuation measurements shall be in accordance with EIA/TIA Standard FOTP-3.

b. Cutoff Wavelength: ≤ 1250 nm.
c. Mode-Field Diameter: 9.300 ± 50 um at 1310 nm
10.50 ±1.00 um at 1550 nm
d. Zero Dispersion Wavelength: 1311±10 nm
e. Zero Dispersion Slope: ≤0.092 ps/(nm^{2}km)
f. Polarization Mode Dispersion: ≤0.5 ps/√km
g. Chromatic Dispersion: The chromatic dispersion shall be ≤ 3.3 ps/(nm.km) for 1285 nm through 1330 nm and ≤ 18 ps/(nm.km) at 1550 nm as measured in accordance with EIA/TIA Standard FOTP 169.

Mechanical Requirements

Fibers

All optical fibers shall be Corning, Spectrum or Lucent single mode glass fibers or approved equivalent. All fibers within a given cable shall be from the same manufacturer, and shall contain no factory splices. Each fiber shall conform to the following minimum requirements:

a. Typical Core Diameter: 8.3 um
b. Cladding Diameter: 125.0±1.0 um
c. Core-to-Cladding Offset: ≤0.8 um
d. Cladding Non-Circularity: ≤ 1.0%

Color Coating

Each fiber shall have a color coating applied to it by the manufacturer. The coating shall not affect the optical characteristics of the fiber. The basic color configuration shall be as follows, in accordance with EIA/TIA-598-A:

1. Blue	5. Slate	9. Yellow

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2. Orange	6. White	10. Violet
3. Green	7. Red	11. Rose
4. Brown	8. Black	12. Aqua

The nominal colored fiber diameter shall be 250 um.

Primary Coating

Each fiber shall have a dual layered, UV acrylate coating applied to it by the manufacturer. The coating shall be mechanically strippable without damaging the fiber. The coating diameter shall be 245±10 um.

The force required to mechanically remove at least 30mm of unaged coating shall not exceed 2.25 pounds as measured in accordance with EIA/TIA Standard FOTP-178.

Central Strength Member

The central strength member shall consist of a dielectric, glass-reinforced plastic rod.

Buffering

All fibers shall be enclosed in non-conductive loose buffer tubes. For fiber optic cables containing 36-fibers or less, each buffer tube shall contain six fibers. For fiber optic cables containing more than 36-fibers, each buffer tube shall contain twelve fibers. The fiber shall not adhere to the inside of the buffer tube. Each buffer tube containing fibers shall be color coded in a similar scheme as the fiber color. The basic color configuration shall be as follows, in accordance with EIA/TIA 598-A:

1. Blue	5. Slate	9. Yellow
2. Orange	6. White	10. Violet
3. Green	7. Red	11. Rose
4. Brown	8. Black	12. Aqua

In buffer tubes containing multiple fibers, the colors shall be stable during temperature cycling and not be subject to fading or smearing onto each other or into the gel filling material. Colors shall not cause fibers to stick together. Buffer tubes shall be of dual layer construction.

The buffer tubes shall be filled with a non-hygroscopic gel to prevent water and moisture penetration. The gel shall contain anti-oxidant additives, and the gel shall be readily removable with conventional solvents. The gel shall be non-toxic and dermatologically safe to exposed skin. It shall be chemically and mechanically compatible with all cable components, nonnutritive to fungus and electrically nonconductive.

Filler Rods

Filler rods shall be used to fill all unused buffer tubes, or shall be used instead of unused buffer

tubes. The filler rod shall be a solid polyethylene material and shall be natural in color. The filler rods shall maintain the concentricity of the cable cross section where required.

Stranding

The buffer tubes shall be stranded around the central strength member using an approved stranding process to form a tight cable core. Binders shall be applied with sufficient tension to secure the tubes to the central member without crushing the buffer tubes. Water swellable yarns shall be applied longitudinally along the central member during stranding.

Water Swellable Tape

A water swellable tape shall be applied longitudinally over the stranded tubes/fillers. The water swellable tape shall be non-nutritive to fungus, electrically non-conductive and homogeneous. The water swellable tape shall also be free from dirt and foreign matter.

Tensile Strength Provisions

Aramid yam shall be helically stranded evenly around the cable core to provide tensile strength. The yarn shall enable the cable to withstand a maximum pulling tension of 607 pounds during installation and 200 pounds long term installed without changing the characteristics of the optical fibers. Each length of cable shall have sufficient strength to be installed in continuous lengths as specified on the plans.

Outer Jacket

A medium density polyethylene (or approved equal) outer jacket shall be applied over the entire cable assembly. The outer jacket shall have a minimum nominal jacket thickness of .055 inches (1.4 mm). The polyethylene shall contain carbon black and shall not promote the growth of fungus. Jacketing material shall be applied directly over the strength members and the water swellable tape. The outer jacket shall contain no metallic elements and shall be of a consistent thickness.

The MDPE jacketed material shall be as defined in ASTM D1248, Type II, Class C and Grades J4, E7 and E8.

The jacket shall be marked in contrasting color at 1 foot intervals with the following information:

NYSDOT - Region ## ITS FIBER OPTIC CABLE - XXX - YYZZ

where ## shall be the corresponding Region number, XXX shall equal the number of optical fibers in the cable and YYZZ: shall be the month and year that the cable was manufactured.
In addition, the outer jacket shall have sequential meter markings as approved by the Engineer. The actual length of the cable shall be within -0%, + 1 % of the length markings. The height of the markings shall be approximately 0.1 inch (2.5mm).

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Ripcord

To facilitate cable preparation, the cable shall have an orange colored ripcord located under the outer jacket.

Bend Radius

The cable shall be capable of withstanding a minimum bending radius of 10 times its outer diameter during operation and 20 times its outer diameter during installation without changing the characteristics of the optical fibers.

Diameter

The outer diameter shall be less than 0.6 inches (15mm).

Other Requirements

Manufacturer's Certification

The following tests shall be performed and the results documented for a cable meeting the requirements herein. The cable manufacturer shall certify that each reel of cable that is furnished meets or exceeds the following test requirements as defined in EIA/TIA-455 "Standard Test Procedures for Fiber Optic Fibers, Cables, Transducers, Sensors, Connecting and Terminating Devices and Other Fiber Optic Components" Fiber Optic Test Procedures (FOTP):

a. Fluid Penetration: When tested in accordance with FOTP-82, a one meter length of unaged cable shall withstand a one meter static head or equivalent continuous pressure of water for one hour without leakage through the open cable end.

b. Filling Compound Flow: When tested in accordance with FOTP-81, the cable shall exhibit no flow (drip or leak) of filling or flooding compound at 158ºF.

c. Compressive Load: The cable shall withstand a minimum compressive load of 0.20 pounds/inch applied uniformly over the length of the compression plate. The cable shall be tested in accordance with FOTP-41, except that the load shall be applied at the rate of 3 mm to 20 mm per minute and maintained for ten (10) minutes. The magnitude of the attenuation change shall not exceed 0.4 dB during loading at 1550 nm. The repeatability of the measurement system is typically ±0.05 dB or less. No fibers shall exhibit a measurable change in attenuation after load removal.

d. Tensile Loading and Bending: When tested in accordance with FOTP-33, using a maximum mandrel and sheath diameter of 22 inches (560 mm) the cable shall withstand a tensile load of 607 pounds. The change in attenuation shall not exceed 0.2 dB during loading and 0.1 dB after loading at 1550 nm.

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e. Low or High temperature bending: When tested in accordance with FOTP-37, the cable shall withstand four full turns around a mandrel of ≤ 10 times the cable diameter after conditioning for four hours at test temperatures of -22ºF and 140ºF. Neither the inner or outer surfaces of the jacket shall exhibit visible cracks, splits, tears or other openings. Optical continuity shall be maintained throughout the test.

f. Impact Resistance: When tested in accordance with FOTP-25, the cable shall withstand 25 impact cycles. The change in attenuation shall not exceed 0.2 dB at 1550 nm. The cable jacket shall exhibit no cracking or splitting upon completion of the test.

g. Cable Flex: When tested in accordance with FOTP-104, the cable shall withstand 25 mechanical flexing cycles at a rate of 30±1 cycles per minute with a sheath diameter not greater than 20 times the cable diameter. The fibers shall not experience an attenuation change greater than 0.1 dB at 1550 nm. The cable jacket shall exhibit no cracking or splitting when observed under five times magnification.

h. Temperature cycling: When tested in accordance with FOTP-3, the change in attenuation at extreme operational temperatures -40ºF and 158ºF shall not exceed 0.2 dB/km at 1550 nm.

i. Cable Twist: When tested in accordance with FOTP-85, a length of cable no longer than 13 feet (4 meters) shall withstand 10 cycles of mechanical twisting. The change in attenuation shall not exceed 0.1 dB at 1550 nm.

Factory Testing

Prior to shipment from the factory each fiber shall be attenuation tested at both 1310 nm and 1550 nm. All optical fibers shall be proof tested by the fiber manufacturer at a minimum load of 685 MPa. The test results for each reel shall be provided to the Engineer for each real furnished at least five-working days prior to installation.

Environmental Requirements

The cable shall meet all of its specif ed requirements during and after being subjected to any combination of the following requirements:

a. Temperature: Shipping and storage temperature: -58ºF to 158ºF
Installation: -22ºF to 158ºF
Operation: -40ºF to 158ºF

b. Relative humidity: from 0% to 95%, non-condensing

Delivery:

The cable shall be delivered on reels without splices. Ten (10) feet of each end of the cable shall be accessible for testing at the Contractors facility prior to installation. Both ends of the cable shall be sealed to prevent moisture ingress.

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A durable weatherproof tag or label on each reel shall contain the following information:

- Manufacturer's name
- Cable type
- Length of cable contained on the reel in feet
- Contractor's name
- NYSDOT contract number
- Reel number

Attached to the reel in a weatherproof envelope shall be the shipping record. The shipping record shall contain the following in addition to the above information:

- Date of manufacture
- Date cable tested
- Cable characteristics (size, attenuation for each fiber)
- Cable reel identification number

Fiber Optic Connectors

Fiber Optic Connectors shall be furnished and installed incidental to the cost of installing fiber optic cables. The connectors shall be factory installed. Field installation of connectors shall only be permitted with the express consent of the Engineer and will be considered on a case by case basis. The connectors shall meet the following requirements:

- Type ST twist lock (bayonet).
- Uses ceramic ferrules
- Fiber secured within the ferrule with epoxy, as specified by the connector or epoxy manufacturer.
- Operating Temperature: -4ºF to 158ºF
- Insertion loss: <0.5 dB
- Return loss: <-55 dB.

CONSTRUCTION DETAILS

Preinstallation Requirements

The Contractor shall be entirely responsible for the fiber optic cable security and adherence to these specifications, from its manufacturer to the time the network is accepted by the State. Prior to installation of the cable the Contractor shall submit a Cable Plant Installation Plan and proof

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of appropriate training for personnel who will be installing the fiber.

Cable Plant Design Submission

The Contractor shall submit the Cable Plant Design Submission to the Engineer for approval. The Engineer shall have thirty-working days to review this submission. The submission shall include the following:

a. Catalog cuts and shop drawings for all cable, connectors, splice equipment, splice enclosures, splice trays and cable installation and test equipment of adequate detail to verify compliance with the specifications.

b. Manufacturer's recommended cable installation techniques such that the optical and mechanical characteristics of the cables are not degraded at the time of installation. The proposed recommendation shall include the following:

    - Cable manufacturer's approved pulling lubricants for use on the cable and method of application. No other lubricants will be permitted.

    - Installation set-up including size and types of rollers, feeder guides, tension gauge make and model number, attachment of pulling jig to jacket and direction of pull.

    - Maximum pulling tensions, which shall specify both, pulling from the cable's conductors and for pulling from the outer jacket.

    - Minimum bending radii, which shall specify a radius both the installation and for long term installation.

    - Method to pull multiple cables

c. Proposed splice locations

d. Splice material manufacturer's recommended procedures for installation of the splices

e. Expected attenuation between end points of all fibers. Including in the attenuation calculation shall be losses resulting from splices and connectors.

No fiber optic cable shall be installed until the items listed above have been submitted and approved by the Engineer.

Experience Requirements

Personnel involved in the installation, splicing and testing of the fiber optic cable shall meet the following requirements:

- A minimum of five (5) years experience in the installation of fiber optic cables, including fusion splicing, terminating and testing single mode fibers.
- Installed five systems where fiber optic cables are outdoors in conduit and where the

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systems have been in continuous satisfactory operation for at least two years.

The contractor shall submit as proof resumes of the personnel listing their names, addresses, telephone numbers and project worked on and the names of references who can be contacted regarding the installed fiber optic systems. Personnel shall meet the following requirements:

- Splicers shall have been trained and certified in fiber optic splicing procedures by the manufacturer of the fiber splice material to be used.
- Installers shall have been trained and certified in fiber optic cable installation and handling procedures by the manufacturer of the fiber optic cable to be used.
- Personnel involved in testing shall have been trained and certified by the manufacturer of the fiber optic cable test equipment to be used, in fiber optic cable testing procedures.

Proof of the appropriate training shall be submitted to the Engineer for approval a minimum of twenty working days prior to start of installation.

Installation Requirements

All fiber optic cable installed underground shall be placed in conduit. No direct burial of cable will be permitted.

Cables shall be installed as shown in the plans and in accordance with the approved cable plant installation plan.

Installation

Fiber optic cable shall be installed in accordance with the approved manufacturer's recommendations. In addition the following requirements shall be met:

a. The number of pullboxes and their locations shall be as shown on the plans The Contractor may be required to install the cable one pullbox at a time. The direction of the cable pull shall be determined by the Contractor and shall require the approval of the Engineer.
b. A minimum of 32 feet of cable slack, or as approved by the Engineer, shall be provided in pullboxes containing splices.
c. Drip loops shall be provided in aerial installations in accordance with the manufacturer's recommendation.

d. No fiber optic cable shall be pulled through more than one 90 degree bend unless so indicated on the approved plans or specifically approved by the Engineer.
e. The cable shall not be pulled over edges or corners, over or around obstructions, or through unnecessary curves or bends.
f. The cable shall be looped in and out of cabinets and pull boxes to provide adequate slack and the least amount of stress on the fibers. The Contractor shall ensure that the cable is not damaged during storage or installation.
g. Fiber optic cable ends shall be kept sealed at all times during installation, using an approved

cable end cap. Tape shall not be permitted to seal the cable end. The cable end shall remain sealed until the Contractor terminates the fiber cables. Cables that are not immediately terminated shall have a minimum of four feet of slack.

h. When using lubricants, the Contractor shall adhere to the cable manufacturer's requirements for the proper amount, application tools and method, and removal of the lubricant from the exposed cable.
i. Optical fiber cable shall be installed in continuous lengths without intermediate splices throughout the project except where splices are indicated on the plans or approved by the Engineer. Splices shall only be in reenterable splice enclosures mounted in pull boxers, junction boxes and underground vaults.
j. The fiber optic drop cable shall be spliced to either the backbone or distribution cable at the locations indicated on the plans or as directed by the Engineer.
k. The maximum pulling tensions and minimum bending radii shall not be violated at any time during installation. The Contractor shall consult with the Engineer concerning existing conduit, pull boxes, and risers, which could force the violation of the minimum bending radius for the fiber optic cable. The Contractor shall obtain approval from the Engineer if modifications to these existing facilities are required. Violation of these parameters shall be cause for rejection of the installed cable.
I. Prior to any installation of cable, the Contractor shall clean existing conduit in accordance with the requirements of these special provisions.
m. Slack cable shall be left in the pull boxes and junction boxes as indicated in the plans or as directed by the Engineer.
n. Slack cable and innerduct where pulled through a pullbox shall be racked to the pullbox wall.

Splicing Requirements

a. All optical fibers shall be spliced to provide continuous runs.
b. Prior to splicing the Contractor shall test each fiber of the installed cable for continuity, anomalies (events above 0.3 dB) and attenuation using an Optical Time Domain Reflectometer (OTDR) at wavelengths of 1310 nm and 1550 nm.
c. Only the fibers designated for splicing shall be spliced. All other fibers shall be routed through the enclosure with at least twelve inches of slack left within the enclosure. Only buffer tubes containing fibers to be spliced shall be opened.
d. Splices shall be made only at locations designated in the approved cable plant layout or as approved by the Engineer.

e. Where two backbone cables are routed in the same duct bank, both cables shall not be spliced in the same pull box.
f. Splicing shall be in accordance with the requirements specified in the items Fiber Optic Splice Enclosure - Type 1 and Fiber Optic Splice Enclosure - Type 2.

Termination Requirements

The connector loss for complete connection to the terminal equipment shall not exceed a mean of 0.75 dB. No connector losses above 1.0 dB shall be permitted. Connectors shall be qualified and accepted on the basis of connector-to-connector mating using similar fibers.

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Unused optical fibers shall be properly protected with sealed end caps.

Testing Requirements

Fiber Optic Cable Post Installation Test

Each optical fiber span including all black/spare fibers shall undergo the following tests after installation of all connectors and splices. A span is defined as a continuous length of fiber including all splices and connectors:

- Using an OTDR test each span at 1310 nm and 1550 for fiber attenuation, continuity, length, and anomalies. Each optical fiber shall meet the following acceptance criteria:
  - Attenuation: Not to exceed 0.4 dB/km + 0.1 dB/splice + 0.5 dB/connector. The number of splices and cable attenuation shall be based upon the approved cable plant layout.
  - Anomalies: No event shall exceed 0.3 dB. If any event is detected that value, the contractor shall repair or replace that section of cable.

- Using an optical source and a power meter measure the attenuation from both ends. The measured attenuation shall meet the criteria defined for the attenuation using the OTDR.

All cable that fails to meet the aforementioned requirements shall be replaced.

The Contractor shall submit to the Engineer a tabulated list of fibers and the actual end-to-end measured values from the above tests and all traces and loss length printouts. Each fiber shall be listed according to the color code and span. This test data shall be the basis of acceptance for the fiber.

Warranties and Guarantees

The Contractor shall provide warranties and guarantees to the State of New York Department of Transportation in accordance with Article 104-08 of the Standard Specifications with the additional requirement that all equipment furnished as part of this contract shall be warrantied for a period of 24 months following system acceptance.

Documentation Requirements

Ten (10) complete sets of Operation and Maintenance manuals shall be provided. The manuals shall, as a minimum, include the following:

- Complete and accurate as-built diagrams showing the fiber optic cable plant and locations of all splices.

- Complete performance data of the cable plant showing the losses at each splice joint and each terminal connector.

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- Installation, splicing, terminating and testing procedures.
- Complete parts list including names of vendors.
- Complete maintenance and trouble-shooting procedures.

METHOD OF MEASUREMENT

The Fiber Optic Cable, Single Mode of the number of fibers indicated will be measured for payment as the number of linear feet actually furnished and installed.

BASIS OF PAYMENT

The unit price bid per linear foot for fiber optic cable shall include the cost of furnishing all labor, material, documentation, tools and equipment and testing of the fiber optic cable to complete the work.

The cost of furnishing and installing connectors and all other passive components, with the exception of the fiber optic splices and splice enclosures, shall be incidental to and included in the contract items for the fiber optic cables.

The cost of the fiber optic splice installation including the enclosure shall be paid under the Fiber Optic Splice Installation items.

Progress payments will be made as follows:

Ninety percent of the bid price of each item will be paid when it has satisfactory completed the Fiber Optic Cable Post Installation Test. Ten percent shall be paid upon system acceptance.

ITEM 683.92211208 - FIBER OPTIC CABLE - 12 FIBERS
ITEM 683.92212408 - FIBER OPTIC CABLE - 24 FIBERS
ITEM 683.92213608 - FIBER OPTIC CABLE - 36 FIBERS
ITEM 683.92214808 - FIBER OPTIC CABLE - 48 FIBERS
ITEM 683.92216008 - FIBER OPTIC CABLE - 60 FIBERS
ITEM 683.92217208 - FIBER OPTIC CABLE - 72 FIBERS
ITEM 683.92219608 - FIBER OPTIC CABLE - 96 FIBERS

DESCRIPTION:

Under these items, the Contractor shall furnish, install and test loose tube single mode fiber optic cables as shown in the plans and as directed by the Engineer.

All equipment required for installation and testing shall be provided by the Contractor. Fiber optic patch panels, splice closures, connectors, snowshoes and pull boxes shall be supplied under other contract items.

Any other ancillary components required to form a complete fiber optic cable plant, including but not limited to, moisture and water sealants, cable caps, fan-out kits, etc., shall be supplied under these items for fiber optic cable and will not be paid for separately.

MATERIALS:

The single mode fiber optic cable shall incorporate a loose buffer tube cable design as specified herein. The fiber optic cable shall be suitable for conduit and aerial installation, supported by a messenger cable, in an outside cable plant environment and for indoor cabling environments when installed in accordance with the current NEC and local building code requirements.

A design using flooding compounds, water-swellable tape or yarn to prevent water penetration between the buffer tubes shall be provided.

The cable shall meet the latest revision requirements of REA 7 CFR1755.900 at a minimum, and shall be new, unused and of current design and manufacture.

The number of fibers in each cable shall be as specified on the plans.

Splicing Requirements

All optical fibers shall be spliced to provide continuous runs. Splices shall be made at locations shown on the plans. Any other splices in the trunk cables shall be permitted only with the approval of the Engineer.

All splices shall use the fusion technique. Fusion splicing equipment shall be provided by the Contractor and shall be cleaned, calibrated and specifically adjusted to the fiber and environmental conditions at the start of each shift. Tools and procedures shall be approved by the cable manufacturer as being compatible with the cable type being delivered.

Each spliced fiber shall be packaged in a protective sleeving or housing. Bare fibers shall be completely re-coated with a protective RTV, gel or similar substance, prior to application of the

sleeve or housing, so as to protect the fiber from scoring, dirt or microbending.

Splice trays shall be used to hold the spliced fibers, with each fiber neatly secured to the tray.

Splice loss shall not exceed a mean of 0.03 dB. No splice losses above 0.06 dB shall be permitted. If a splice is measured to exceed 0.06 dB during the splicing process, it shall be remade until its loss falls below 0.06 dB. Each attempt shall be recorded for purposes of acceptance.

All splice losses shall be recorded in tabular form and submitted to the Engineer for approval. If an optical time domain reflectometer (OTDR) is used to record splice loss, chart recordings of the "signature" shall be submitted with the splice data with a record of all OTDR settings and the OTDR locations written on the trace.

Splices specifically required for connecting drop cables or miscellaneous spur cables into the trunk/backbone cable system shall be supplied under another contract item. Splices of trunk/backbone cable segments directly to each other that are required due to reel length or other practical limitations shall be included under these items and shall not be paid for separately.

If splices to fiber optic A pigtails at (short one-fiber cables with connectors attached at the factory) are used to provide the method of connectorizing the fibers at the field cabinets and other termination points, these splices will be paid for under the item for fiber optic connectorization and not under the item for splicing.

Slack Storage of Fiber Optic Cables

As part of these items, slack fiber shall be supplied as necessary for maintenance coils and to allow for splicing of the fiber optic cables in a controlled environment such as a splicing van or tent. The slack fiber shall then be stored underground in the fiber optic pull boxes.

Optical Requirements

Attenuation: The attenuation shall be less than 0.64 decibels/mile (dB/mile) at a wavelength of 5.16×10^{-5} inches and less than 0.48 dB/mile at a wavelength of 6.10×10^{-5} inches. Fiber attenuation shall be uniform with no discontinuities greater than 0.1 dB. The attenuation at 5.44×10^{-5} inches + 1.18×10^{-7} inches shall not exceed 3.36 dB/mile. The attenuation measurements shall be in accordance with the latest EIA/TIA Standards FOTP-20, 59, 61 and 78. The average change in attenuation at extreme operational temperatures (-40^{o} F to + 158^{o} F) shall not exceed 0.081 dB/mile at 6.10×10^{-5} inches. The magnitude of the maximum attenuation change of each individual fiber shall not be greater than 0.24 dB/mile at 6.10×10^{-5} inches. The change in

attenuation measurements shall be in accordance with the latest revisions of EIA/TIA Standard FOTP-3.

Cutoff Wavelength: The fiber cutoff wavelength shall be less than or equal to 4.96×10^{-5} inches. Mode-Field Diameter: $3.62 \times 10^{-4} \pm 1.57 \times 10^{-5}$ inches at 5.16×10^{-5} inches; $4.09 \times 10^{-4} \pm 3.15 \times 10^{-5}$ inches at 6.10×10^{-5} inches.

Zero Dispersion Wavelength: 5.17×10^{-5} inches $\pm 3.94 \times 10^{-7}$ inches

Zero Dispersion Slope: Shall be less than or equal to 0.092 ps/(nm^2.km)

Polarization Mode Dispersion: Shall be less than or equal to 0.5 ps/$(km)^2$

Chromatic Dispersion: The chromatic dispersion shall be less than 3.3 ps/(nm.km) for 5.06×10^{-5} inches through 5.24×10^{-5} inches and less than 18 ps/(nm.km) at 6.10×10^{-5} inches as measured in accordance with the latest revision of EIA/TIA Standard FOTP-169.

Mechanical Requirements

Fibers: All optical fibers shall be Corning, Spectrum or Lucent single mode glass fibers or approved equivalent. All fibers within a given cable shall be from the same manufacturer, and shall contain no factory splices. Each fiber shall conform to the following minimum requirements:

Typical Core Diameter: 3.23×10^{-4} inches
Cladding Diameter: $4.92 \times 10^{-3} \pm 3.94 \times 10^{-5}$ inches
Core-to-Cladding Offset: less than or equal to 3.15×10^{-5} inches
Cladding Non-Circularity: less than or equal to 1.0%

Color Coating: Each fiber shall have a color coating applied to it by the manufacturer. The coating shall not affect the optical characteristics of the fiber. The basic color configuration shall be as follows, in accordance with EIA/TIA-598:

1.	Blue	7.	Red
2.	Orange	8.	Black
3.	Green	9.	Yellow
4.	Brown	10.	Violet
5.	Slate	11.	Rose
6.	White	12.	Aqua

The nominal colored fiber diameter shall be 9.84×10^{-3} inches.

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Primary Coating: Each fiber shall have a dual layered, UV acrylate coating applied to it by the manufacturer. The coating shall be mechanically strippable without damaging the fiber. The coating diameter shall be $9.64 \times 10^{-3} \pm 1.97 \times 10^{-4}$.

The force required to mechanically remove at least 1 3/16 inches of unaged coating shall not exceed 2.25 lbf as measured in accordance with the latest revision of EIA/TIA Standard FOTP-178.

Central Strength Member: The anti-buckling central strength member shall consist of a Kevlar or epoxy-glass composite rod.

Buffering: All fibers shall be enclosed in non-conductive loose buffer tubes. Each buffer tube shall contain up to twelve fibers. The Contractor shall submit the fiber count per buffer tube and the buffer tube count configuration to the Engineer for approval. The fiber shall not adhere to the inside of the buffer tube. Each buffer tube containing fibers shall be color coded in a similar scheme as the fiber color. The basic color configuration shall be as follows, in accordance with EIA/TIA-598:

1.	Blue	7.	Red
2.	Orange	8.	Black
3.	Green	9.	Yellow
4.	Brown	10.	Violet
5.	Slate	11.	Rose
6.	White	12.	Aqua

In buffer tubes containing multiple fibers, the colors shall be stable during temperature cycling and not be subject to fading or smearing onto each other or into the gel filling material. Colors shall not cause fibers to stick together. Buffer tubes shall be of dual layer construction.

The buffer tubes shall be filled with a hydrocarbon-based gel to prevent water and moisture penetration. The gel shall contain anti-oxidant additives, and the gel shall be readily removable with conventional solvents. The gel shall be non-toxic and dermatologic ally safe to exposed skin. It shall be chemically and mechanically compatible with all cable components, non-nutritive to fungus, non-hygroscopic and electrically non-conductive.

Filler Rods: Filler rods shall be used to fill all unused buffer tubes, or shall be used instead of unused buffer tubes. The filler rod shall be a solid polyethylene material and shall be natural in

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color. The filler rods shall maintain the concentricity of the cable cross section where required.

Stranding: The buffer tubes shall be stranded around the central strength member using an approved stranding process to form a tight cable core. Binders shall be applied with sufficient tension to secure the tubes to the central member without crushing the buffer tubes.

Core and Cable Flooding: To prevent water penetration outside of the buffer tubes, all cavities within the cable shall be filled with a flooding compound or water blocking tape shall be used. The flooding compounds shall not affect the optical characteristics of the cable. The flooding compound shall contain anti-oxidant additives, and shall be readily removable with conventional solvents. The flooding compound shall be non-toxic and dermatologic ally safe to exposed skin. It shall be chemically and mechanically compatible with all cable components, non-nutritive to fungus, non-hygroscopic and electrically non-conductive.

Tensile Strength Provisions: Aramid yarn shall be helically stranded evenly around the cable core to provide tensile strength. The yarn shall enable the cable to withstand a maximum pulling tension of 606.98 lbf during installation and 200.08 lbf longterm installed without changing the characteristics of the optical fibers. Each length of cable shall have sufficient strength to be installed in continuous lengths as specified on the plans.

Outer Jacket: A medium density polyethylene (or approved equal) outer jacket shall be applied over the entire cable assembly. The outer jacket shall have a minimum nominal jacket thickness of .06 inches. The polyethylene shall contain carbon black and shall not promote the growth of fungus. The outer jacket shall contain no metallic elements and shall be of a consistent thickness.

The jacket shall be marked in contrasting color at 3.28 feet intervals with the following information:

NYSDOT - XX - YYZZ, where XX shall equal the number of optical fibers in the cable and YYZZ shall be the month and year that the cable was manufactured.

In addition, the outer jacket shall have sequential meter markings as approved by the Engineer. The actual length of the cable shall be within 1% of the length markings.

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Ripcord: To facilitate cable preparation, the cable shall have an orange colored ripcord located under the outer jacket.

Bend Radius. The cable shall be capable of withstanding a minimum bending radius of 10 times its outer diameter during operation and 20 times its outer diameter during installation without changing the characteristics of the optical fibers.

Other Requirements

Manufacturer's Certification: The following tests shall be performed and the results documented for a cable meeting the requirements herein. The cable manufacturer shall certify that each reel of cable furnished meets or exceeds the following specifications:

Water Penetration: When 3.28 foot static head of water or equivalent continuous pressure is applied at one end of 3.28 foot length of filled cable for 24 hours, no water shall leak through the open cable end. If the first sample fails, subsequent tests shall be done in accordance with either BELLCORE TR-TSY-000020 or REA PE-90. All water penetration testing shall be performed in accordance with EIA/TIA Standard FOTP-82.

Filling Compound Flow: When tested in accordance with EIA/TIA Standard FOTP-81, the cable shall exhibit no flow (drip or leak) of filling or flooding compound at 158º $\pm$ 35.6º F. If material flow is detected, the weight of any compound that drips from the sample shall be less than 1.1 x 10^{-4} lbs.

Compressive Strength: The cable shall withstand a minimum compressive load of 125.62 lbf/in applied uniformly over the length of the compression plate. The cable shall be tested in accordance with EIA/TIA Standard FOTP-41, except that the load shall be applied at the rate of 0.098 inches per minute and maintained for 1 minute. The magnitude of the attenuation change shall be within the repeatability measurement system for 90% of the test fibers. The remaining 10% of the fibers shall not experience an attenuation change greater than 0.1 dB at 6.10 x 10^{-5} inches. The repeatability of the measurement system is typically + 0.05 dB or less. No fibers shall exhibit a measurable change in attenuation after load removal.

Impact Resistance: When tested in accordance with EIA/TIA Standard FOTP-25, the cable shall withstand 20 impact cycles. The magnitude of the attenuation change shall be within the

repeatability of the measurement system for 90% of the test fibers. The remaining 10% of the fibers shall not experience an attenuation change greater than 0.1 dB at 6.10×10^{-5} inches. The repeatability of the measurement system shall be + 0.05 dB or less. The cable jacket shall exhibit no cracking or splitting upon completion of the test.

Cable Flex: When tested in accordance with EIA/TIA Standard FOTP-104, the cable shall withstand 25 mechanical flexing cycles at a rate of 30 + 1 cycles per minute with a sheath diameter not greater than 20 times the cable diameter. The magnitude of the attenuation change shall be within the repeatability of the measurement system for 90% of the test fibers. The remaining 10% of the fibers shall not experience an attenuation change greater than 0.1 dB at 6.10×10^{-5} inches. The repeatability of the measurement system shall be + 0.05 dB or less. The cable jacket shall exhibit no cracking or splitting when observed under five times magnification.

Cable Freezing: When tested in accordance with EIA/TIA Standard FOTP-98, the cable shall be immersed in water. Upon freezing, the magnitude of the attenuation change shall be within the repeatability of the measurement system for 90% of the test fibers. The remaining 10% of the fibers shall not experience an attenuation change greater than 0.1 dB at 6.10×10^{-5} inches. The repeatability of the measurement system shall be + 0.05 dB or less. The cable jacket shall exhibit no cracking.

Jacket Shrinkage: When tested in accordance with EIA/TIA Standard FOTP-86, the maximum outer cable jacket shrinkback shall be less than 5%.

Lightning Protection: When tested in accordance with the proposed EIA/TIA Standard FOTP-181, the cable shall withstand a simulated lightning strike with a peak value of the current pulse greater than or equal to 105 kA. The test current used shall be damped oscillatory with a maximum time-to-peak value of 15 µs (which corresponds to a minimum frequency of 16.7 kHz) and a maximum frequency of 30 kHz. The time to half-value of the waveform envelope shall be from 40-70 ìs.

Cable Twist: When tested in accordance with EIA/TIA Standard FOTP-85, a length of cable no longer than 6½ feet shall withstand 10 cycles of mechanical twisting. The magnitude of the attenuation change shall be within the repeatability of the measurement system for 90% of the test fibers. The remaining 10% of the fibers shall not experience an attenuation change greater than 0.1 dB at 6.10×10^{-5} inches. The repeatability of the measurement system shall be + 0.05

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dB or less. The cable jacket shall exhibit no cracking or splitting when observed under five times magnification.

Quality Assurance Provision: All optical fibers shall be proof tested by the fiber manufacturer at a minimum load of 145 psi.

All optical fibers shall be attenuation tested. The attenuation of each fiber shall be provided with each reel of cable furnished.

Environmental Requirements: The cable shall meet all of its specified requirements during and after being subjected to any combination of the following requirements:

Shipping/storage temperature: -58^{o} F to $+158^{o}$ F
Installation temperature: -22^{o} F to $+158^{o}$ F
Operating temperature: -40^{o} F to $+158^{o}$ F
Relative humidity: From 0% to 95%, non-condensing

CONSTRUCTION DETAILS:

Experience Requirements
Personnel involved in the installation, splicing and testing of the fiber optic cables shall meet the following requirements:

A minimum of three (3) years of experience in the installation of fiber optic cables; including fusion splicing, terminating and testing single mode fibers.

Have installed two systems where fiber optic cables are outdoors aerially and in conduit and where the systems have been in continuous satisfactory operation for at least two years. The Contractor shall submit as proof, photographs or other supporting documents, and the names, addresses and telephone numbers of the operating personnel who can be contacted regarding the installed fiber optic systems.

One fiber optic cable system (which may be one of the two in the preceding paragraph) that the Contractor can arrange for demonstration to NYSDOT representatives and the Engineer.

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Splicers shall have been trained and certified by the manufacturer of the fiber splice material to be used, in fiber optic splicing procedures. Proof of this training shall be submitted to the Engineer for approval.

Installers shall have been trained and certified by the manufacturer of the fiber optic cable to be used in fiber optic cable installation and handling procedures. Proof of this training shall be submitted to the Engineer for approval.

Personnel involved in testing shall have been trained and certified by the manufacturer of the fiber optic cable test equipment to be used, in fiber optic cable testing procedures. Proof of this training shall be submitted to the Engineer for approval.

Constructibility Review

The Contractor shall perform a careful and complete Constructibility Review of the proposed fiber optic system design. At least one month prior to beginning installation, the Contractor shall submit a report detailing the results of this review.

Installation in Conduit

The cable pulling operation shall be performed such that a minimum bending of the cable shall occur in the unreeling and pulling operations. Entry guide chutes shall be used to guide the cable into the pullbox conduit ports. Lubricating compound shall be used to minimize friction. Corner rollers (wheels), if used, shall not have radii less than the minimum installation bending radius of the cable. A series array of smaller wheels can be used for accomplishing the bend if the array is specifically approved by the cable manufacturers. The pulling tension shall be continuously measured and shall not be allowed to exceed the maximum tension specified by the manufacturer of the cable, or fuse links and breaks shall be used to ensure that the cable tensile strength is not exceeded. The pulling system shall have an audible alarm that shall sound whenever a preselected tension level is reached. Tension levels shall be recorded continuously and shall be given to the Engineer upon request.

The number of pullboxes and their locations shall be as shown on the plans. The Contractor may be required to install the cable one pullbox at a time. The direction of the cable pull shall be determined by the Contractor and shall require the approval of the Engineer.

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The central strength member and aramid yarn shall be attached directly to the pulling eye during cable pulling. "Basket grip" or "Chinese finger" type attachments to the cable outer jacket shall not be permitted. A breakaway swivel with a cable manufacturer approved tensile rating shall be used on all pulls.

When simultaneously pulling fiber optic cable with other cables, separate grooved rollers shall be used for each cable.

No fiber optic cable shall be pulled through more than one 90 degree bend unless so indicated on the plans or specifically approved by the Engineer.

Documentation Requirements

Installation Practices for Outdoor Fiber Optic Cable Systems Documentation
At least one month prior to starting installation of the fiber optic cable plant, the Contractor shall submit to the Engineer for approval ten (10) copies of the Contractor's Installation Practices for Outdoor Fiber Optic Cable Systems at manual. This manual shall address the Contractor's proposed practices covering all aspects of the fiber optic cable plant. This submittal shall include all proposed procedures, list of installation equipment, and splicing and test equipment. Location of the splicing points with the description of the splicing function. Test and quality control procedures shall be detailed as well as procedures for corrective action.

Testing Data:
Optical Link Budget testing for point to point and closed loop fibers (for all fibers). OTDR testing plan and procedure, OTDR test data and its report (for all fibers).

Operation and Maintenance Documentation: After the fiber optic cable plant has been installed, ten (10) complete sets of Operation and Maintenance Documentation shall be provided. The documentation shall, as a minimum, include the following:

Complete and accurate as-built diagrams showing the entire fiber optic cable plant including locations of all splices.
Final copies of all approved test procedures
Complete performance data of the cable plant showing the losses at each splice location and each terminal connector.

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Complete parts list including names of vendors.
Complete maintenance and trouble-shooting procedures.

Testing Requirements

All fibers shall be tested bi-directionally at both 5.16×10^{-5} inches and 6.10×10^{-5} inches. The Contractor shall submit detailed test procedures for approval by the Engineer.

The fiber optic cables shall be subjected to the levels of testing described in the General Provisions for ITS General Provisions for this project.

METHOD OF MEASUREMENT:

The fiber optic cables will be measured for payment as the number of linear feet of cable, including lengths stored as splicing slack and maintenance coils, actually furnished and installed.

BASIS OF PAYMENT:

The unit price bid per linear foot for fiber optic cable shall include the cost of furnishing all labor, material, documentation, tools and equipment and testing of the fiber optic cable necessary to complete the work.

Fifty percent (50%) of the bid price of each item will be paid upon satisfactory completion of Milestone 3, On-Site Stand Alone Tests; twenty percent (20%) will be paid upon satisfactory completion of Milestone 4, System Interface Test; twenty percent (20%) will be paid upon satisfactory completion of Milestone 5, System Performance Tests; and ten percent (10%) will be paid upon satisfactory completion of Milestone 6, 90 Day Operational Test, as described in the ITS Special Provisions part of the contract and within the plans/proposal.